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adolescent health

VOLUME I: SUMMARY AND POLICY OPTIONS

J952-29

CONGRESS OF THE UNITED STATES
OFFICE OF TECHNOLOGY ASSESSMENT

Recommended Citation:

U.S. Congress, Office of Technology Assessment, *Adolescent Health—Volume I: Summary and Policy Options*, OTA-H-468 (Washington, DC: U.S. Government Printing Office, April 1991).

For sale by the Superintendent of Documents
U.S. Government Printing Office, Washington, DC 20402-9325
(order form can be found in the back of this report)

Foreword

Adolescence, the poet suggested, "is the one age [that] defeats the metaphor." In many respects, such as legal and financial dependence, adolescents are still children; in other respects, such as physical development, they approach and then reach adult status. In part because they experience profound biological, emotional, intellectual and social changes, adolescents as a group—and some adolescents more than others—are uniquely vulnerable to the impact of many of the Nation's social policies. For numerous reasons, policymakers and the public have long struggled with the establishment of appropriate health-related policies and programs for adolescents.

OTA's report responds to the request of numerous Members of Congress to review the physical, emotional, and behavioral health status of contemporary American adolescents, including adolescents in groups who might be more likely to be in special need of health-related interventions: adolescents living in poverty, adolescents from racial and ethnic minority groups, Native American adolescents, and adolescents in rural areas. In addition, OTA was asked to: 1) identify risk and protective factors for adolescent health problems and integrate national data in order to understand the clustering of specific adolescent problems, 2) evaluate options in the organization of health services and technologies available to adolescents (including accessibility and financing), 3) assess options in the conduct of national health surveys to improve collection of adolescent health statistics, and 4) identify gaps in research on the health and behavior of adolescents.

Senator Daniel K. Inouye, Chairman of the Senate Select Committee on Indian Affairs, and Senator Nancy Landon Kassebaum, Ranking Minority Member of the Subcommittee on Education, Arts, and Humanities of the Senate Committee on Labor and Human Resources, were the lead requesters of OTA's adolescent health study. Requesters included Chairmen or Ranking Minority Members of the Senate Appropriations Committee, the Senate Commerce, Science, and Transportation Committee, the Senate Finance Committee, the Senate Labor and Human Resources Committee, the Senate Small Business Committee, the Senate Veterans' Affairs Committee, and the House Interior and Insular Affairs Committee; and the Chairman and six senatorial members of the congressional Technology Assessment Board. A letter of support was received from the House Select Committee on Children, Youth, and Families.

This OTA assessment is being published in three volumes: Volume I, *Summary and Policy Options*; Volume II, *Background and the Effectiveness of Selected Prevention and Treatment Services*; and Volume III, *Crosscutting Issues in the Delivery of Health and Related Services*. Volumes II and III will be available later in 1991. Two related reports have already been issued as part of this study (see appendix A).

This assessment was greatly assisted by an advisory panel, chaired by Felton Earls, Professor of Behavioral Sciences at the Harvard University School of Public Health. Michael I. Cohen, Chairman of the Department of Pediatrics at the Albert Einstein College of Medicine in New York, served as vice chairman. In addition, many individuals from academia, the Federal Government, the private sector, and the public provided information and reviewed drafts of the assessment. OTA would like to especially thank Carnegie Corporation of New York, and its operating program, the Carnegie Council on Adolescent Development, for their generous and diverse assistance throughout the course of this assessment. Finally, the members of our Youth Advisory Panel—a group of 21 individuals ages 10 through 19, who met often with OTA staff, with OTA's advisory panel, and with workshop participants—were essential to the study. These young people provided the adolescent perspective on health concerns of importance to young people, and made valuable suggestions for improving health services and health policy. The final responsibility for the content of the assessment rests with OTA.

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NOTE: OTA appreciates and is grateful for the valuable assistance and thoughtful critiques provided by the advisory panel members. The panel does not, however, necessarily approve, disapprove, or endorse this report. OTA assumes full responsibility for the report and the accuracy of its contents.

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*Supported by Carnegie Corporation of New York and the Carnegie Council on Adolescent Development.

Volume I

SUMMARY AND POLICY OPTIONS

Thirteen's anomalous—not that, not this:
Not folded bud, or wave that laps a shore,
Or moth proverbial from the chrysalis.
Is the one age defeats the metaphor.
Is not a town, like childhood, strongly walled
But easily surrounded; is no city.
Nor, quitted once, can it be quite recalled—
Not even with pity.

—Phyllis McGinley, "Portrait of a Girl With a Comic Book"

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Contents

Page

Introduction 1
- Scope of the Report 2
- Organization of the Report 6

Major Findings 6
- Are American Adolescents Healthy? 6
- Which Adolescents Experience the Worst Problems? 16
  - Age Differences in Selected Adolescent Health Problems 16
  - Gender Differences in Selected Adolescent Health Problems 17
  - Racial, Ethnic, and Socioeconomic Status Differences in Selected Adolescent Health Problems . 19
  - Other Factors Associated With Differences in Adolescent Health Problems 22
- What Causes Adolescent Health Problems? 23
- What Should Be Done To Prevent and Treat Adolescent Health Problems? 24
  - Prevention of Adolescent Health Problems 25
  - Treatment of Adolescent Health Problems 25
- What Is the Federal Government's Role in Improving Adolescent Health? 32
  - U.S. Executive Branch Agencies 32
  - Congressional Committees 40

Major Policy Options 44
- A New Approach 44
- Major Option 1: Congress Could Take Steps To Improve Adolescents' Access to Appropriate Health and Related Services 46
  - Strategy 1-1: Congress Could Support the Development of Centers That Provide Comprehensive and Accessible Services Specifically for Adolescents in Schools and/or Communities 49
  - Strategy 1-2: Congress Could Take Steps To Improve Adolescents' Financial Access to Health Services 54
  - Strategy 1-3: Congress Could Take Steps To Improve Adolescents' Legal Access to Health Services 57
  - Strategy 1-4: Congress Could Increase Support for Training of Health Care Providers Who Work With Adolescents 62
  - Strategy 1-5: Congress Could Take Steps To Empower Adolescents To Gain Access to Health Services 63
- Major Option 2: Congress Could Take Steps To Restructure and Invigorate the Federal Government's Efforts To Improve Adolescents' Health 65
  - Strategy 2-1: Congress Could Create a Locus for a Strong Federal Role in Addressing Adolescent Health Issues 65
  - Strategy 2-2: Congress Could Encourage the U.S. Executive Branch To Invigorate Traditional Federal Activities in Program Development 69
  - Strategy 2-3: Congress Could Encourage the U.S. Executive Branch To Invigorate Traditional Federal Activities in Research on Adolescent Development 72
  - Strategy 2-4: Congress Could Encourage the U.S. Executive Branch To Invigorate Traditional Federal Activities in Data Collection 74
  - Strategy 2-5: Congress Could Create a Locus for a Strong Federal Role in Addressing Adolescent Health Issues and Invigorate Traditional Federal Activities in Program Development, Research, and Data Collection 76
- Major Option 3: Congress Could Support Efforts To Improve Environments for Adolescents 76
  - Strategy 3-1: Congress Could Take Steps To Increase Support to Families of Adolescents 78
  - Strategy 3-2: Congress Could Take Steps To Support Additional Limitations on Adolescents' Access to Firearms 80
  - Strategy 3-3: Congress Could Support the Expansion of Appropriate Recreational Opportunities for Adolescents 81
  - Strategy 3-4: Congress Could Monitor the Effects on Adolescents of the Implementation of the National and Community Service Act of 1990 82
- Summary of Major Policy Options 83

Specific Findings and Policy Options 83
- The Conceptualization of Adolescent Health (ch. 2) 83
- Parents' and Families' Influence on Adolescent Health (ch. 3) 84

Page
Schools and Discretionary Time (ch. 4) 85
Prevention and Services Related to Selected Adolescent Health Concerns (chs. 5 through 14) 87
  Accidental Injuries (ch. 5) 88
  Chronic Physical Illnesses (ch. 6) 89
  Nutrition and Fitness Problems (ch. 7) 90
  Dental and Oral Health Problems (ch. 8) 91
  AIDS and Other Sexually Transmitted Diseases (ch. 9) 93
  Pregnancy and Parenting (ch. 10) 94
  Mental Health Problems (ch. 11) 97
  Alcohol, Tobacco, and Drug Abuse (ch. 12) 99
  Delinquency (ch. 13) 101
  Homelessness (ch. 14) 105
Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents (ch. 15) 106
Problems in Adolescents' Financial Access to Health Services (ch. 16) 110
Consent and Confidentiality Issues (ch. 17) 111
Issues in the Delivery of Services to Special Groups of Adolescents (ch. 18) 113
  Poor Adolescents 113
  Racial and Ethnic Minority Adolescents 115
  Rural Adolescents 115
The Role of Federal Agencies in Adolescent Health (ch. 19) 117
Barriers and Opportunities to Change 118
  Barriers to Change 118
    Health Care System 118
    Federal Budget Deficit 119
    Limitations of Prevailing Approaches to Program Design and Evaluation 120
  Opportunities To Change 120
    Renewed Attention to Adolescent Health Concerns 120
    Concerns About the Changing Nature of the Workforce and the Country's Economic Future 121
Conclusion 123

Appendix A. Method of the Study 127
Appendix B. Acknowledgments 142
Appendix C. Issues Related to the Lack of Information About Adolescent Health and Health and Related Services 159
Appendix D. Glossary of Abbreviations and Terms 162
References 179

Boxes

Box *Page*
A. Issues of Definition in the Assessment of Adolescent Health 3
B. Economic Costs of Selected Adolescent Health Problems 18
C. Key Groups' Recommendations on Health Education for Adolescents 26
D. Healthy People 2000 Service and Protection Objectives That Pertain to Adolescents 77

Figures

Figure *Page*
1. Growth Spurts During Adolescence 6
2. Overall Death Rates Among the U.S Population, by Five-Year Age Groups, 1987 7
3. Death Rates Among U.S. Adolescents Ages 10 to 19, by External Causes of Death, 1987 8
4. Trends in Death Rates for the Five Leading Causes of Death Among U.S. Adolescents Ages 10 to 14 and Ages 15 to 19, 1970-87 9
5. High School Dropout Rates in the United States, 1989 10
6. U.S. Adolescents With HIV Infection or Other Sexually Transmitted Diseases (STDs): National and Local Estimates 12

Figure *Page*
7. Overview of U.S. Adolescent Pregnancy and Parenting 13
8. Overview of U.S. Adolescents' Use of Alcohol, Cigarettes, and Illicit Drugs, 1988 15
9. Victimization Rates for Rape, Robbery, and Assault, by Age and Sex, 1988 16
10. Percent Mortality Due to Seven Leading Causes of Death for Black and White U.S. Adolescents Ages 10 to 14 and 15 to 19, 1987 20
11. Number of U.S. Adolescents Ages 10 to 18 and Number Living in Poor or Near-Poor Families, by Race and Ethnicity, 1988 21
12. Use of Illicit Drugs by Different Adolescent Populations 22
13. Estimated Adolescent-Specific Expenditures by U.S. Executive Branch Agencies Responding to OTA's 1989 Survey 38
14. Birth Rates, Abortion Rates, Miscarriage Rates, and Pregnancy Rates Among Females Ages 15 to 19 in 11 Countries, 1983 95
15. Trends in Sexual Experience Rates and Pregnancy Rates Among U.S. Females Ages 15 to 19 and Trends in Pregnancy Rates Among Sexually Experienced U.S. Females Ages 15 to 19, 1970-88 96
16. Trends in Illicit Drug Use by High School Seniors, 1975-89 101
17. Trends in Arrest Rates for Serious Property Offenses and Serious Violent Offenses by Persons Under Age 18, 1965-88 103
18. Trends in Arrest Rates for Aggravated Assault and Murder and Nonnegligent Manslaughter by Persons Age 18 and Under, 1965-88 104
19. Distribution of Juveniles in Custody in Public Juvenile Facilities, by Racial and Ethnic Group, 1987 105
20. Visits to Private Office-Based Physicians by U.S. Citizens, All Ages Combined and U.S. Adolescents Ages 10 to 18, 1985 107
21. Distribution of Visits to Private Office-Based Physicians by U.S. Adolescents Ages 10 to 18, by Physician Specialty, 1985 107
22. Socioeconomic Status of U.S. Adolescents Ages 10 to 18, by Family Income as a Percent of the Federal Poverty Level, 1987 113
23. Family Incomes as a Percent of the Federal Poverty Level, by U.S. Adolescents' Living Arrangements, 1988 114
24. Family Incomes as a Percent of the Federal Poverty Level, by U.S. Adolescents' Race/Ethnicity, 1988 116
25. Changes and Projected Changes in the Number of Dependents per 100 Persons of Working Age, 1960 to 2040 122
26. Projected Changes in the Racial and Ethnic Makeup of the U.S. Population Under Age 18, 1982 to 2080 122
27. Projected Changes in the Racial, Ethnic, and Gender Makeup of the U.S. Labor Force, 1988 to 2000 123

Tables

Table *Page*
1. Major Problems That Affect U.S. Adolescents' Access to Health and Related Services 28
2. Primary Functions of U.S. Executive Branch Agencies With a Role in Adolescent Health 33
3. Congressional Committees With a Role in Adolescent Health 41
4. Summary of Three Major Policy Options Related to U.S. Adolescents' Health 44
5. Strategies for Major Option 1: Congress Could Take Steps To Improve Adolescents' Access to Appropriate Health and Related Services 47
6. Strategies for Major Option 2: Congress Could Take Steps To Restructure and Invigorate the Federal Government's Efforts To Improve Adolescents' Health 66
7. Promising or Neglected Areas of Adolescent Health Promotion, Problem Prevention, and Treatment: Examples of Program Development Needs 70
8. Strategies for Major Option 3: Congress Could Support Efforts To Improve Adolescents' Environments 79
9. Specific Options Related to Conceptualizations of Adolescent Health 84
10. Specific Options Related Parents' and Families' Influence on Adolescent Health 86
11. Specific Options Related to Schools and Discretionary Time 87

Table *Page*
12. Specific Options Related to Accidental Injuries 89
13. Specific Options Related to Chronic Physical Illnesses 91
14. Specific Options Related to Nutrition and Fitness Problems 92
15. Specific Options Related to Dental and Oral Health Problems 92
16. Specific Options Related to AIDS/HIV Infection and Other Sexually Transmitted Diseases 94
17. Specific Options Related to Pregnancy and Parenting 98
18. Specific Options Related to Mental Health Problems 100
19. Specific Options Related to Alcohol, Tobacco, and Drug Abuse 102
20. Specific Options Related to Delinquency 106
21. Specific Options Related to Homelessness 107
22. Specific Options Related to the Delivery of Primary and Comprehensive Health Services to Adolescents 111
23. Specific Options Related to Problems in Adolescents' Financial Access to Health Services 112
24. Specific Options Related to Concerns About Consent and Confidentiality in Adolescent Health Care Decisions 113
25. Specific Options Related to the Delivery of Services to Poor Adolescents, Racial and Ethnic Minority Adolescents, and Rural Adolescents 117
26. Specific Options Related to the Role of Federal Agencies in Adolescent Health 118

SUMMARY AND POLICY OPTIONS

Introduction

Adolescents are commonly regarded as among the healthiest of Americans, and those least in need of health services.[1] Perhaps as a consequence, adolescent health has not been a national priority. Yet OTA's analysis, requested by numerous members of Congress,[2] suggests that perhaps one out of five of today's 31 million adolescents (245) have at least one serious health problem.[3] Even more disturbing, U.S. adolescents often face formidable barriers in trying to obtain basic health care.

Particularly at risk are those adolescents who are both poor and members of racial or ethnic minority groups, because they are most likely to be without the necessary safety nets that help many adolescents through the second decade of life. But today's white, middle-class adolescents are also at high risk of developing problems and not having access to needed health services and other sources of support. Unique income, insurance, informational, legal, physical, and social-psychological barriers all can interfere with the development of appropriate health promotion, problem prevention, treatment, and environmental support strategies for adolescents.

Today's adolescents are America's future workforce, and OTA's analysis of American adolescents' health needs suggests that changes in the Nation's approach to adolescent health would be well worth making. **Three major options that OTA believes Congress[4] may want to consider are:**

- **improving U.S. adolescents' access to health services,**
- **restructuring and invigorating Federal efforts to improve adolescent health, and**
- **improving adolescents' environments.**

Adjustments in these areas would both signal and hasten a needed sea-change in other aspects of the Nation's approach to adolescent health, in particular, **the development of a more sympathetic, supportive environment for adolescents.**

Photo credit: Education Week

Adolescents are commonly regarded as the healthiest of Americans, yet OTA's analysis suggests that adolescents do have health problems and problems gaining access to services.

OTA's analysis suggests, however, that no matter how worthwhile changes to the Nation's approach to adolescents can be, the changes will not all be easy to make. Some approaches to the prevention and treatment of the health problems of adolescents are relatively straightforward, although they may require considerable effort and increases in funding at a time when resources seem especially scarce. Unfortunately, though, other solutions may be difficult to implement. The reasons are themselves complex but primarily include shortcomings in the knowledge base; the fact that the beneficiaries of change would be adolescents; and intense ideological differences within the United States on issues of importance to adolescents. Further, the relationship between adolescents and their parents is complicated, in that at the same time the relationship should be preserved and enhanced, the health needs of some adolescents may conflict with their parents' right to exert parental authority and control.

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[1] A previous OTA report, *Healthy Children: Investing in the Future*, examined several health issues related to prenatal care, infants, and young children (224).

[2] Congressional requesters of OTA's Adolescent Health Report, with current committee chair or ranking minority assignments, are listed in app. A, "Method of the Study."

[3] Health problems were defined broadly in this Report (see below). Examples of serious health problems and their prevalence among U.S. adolescents are presented below and in app. B, "Burden of Health Problems Among U.S. Adolescents," in Vol. III.

[4] OTA is mandated to provide advice to the U.S. Congress; thus, the focus of this Report is on the role of the Federal Government.

Scope of the Report

This Report, requested by numerous members of Congress, reviews the physical, emotional, and behavioral health status of contemporary American adolescents, including adolescents in groups considered to be in special need: adolescents living in poverty, adolescents from racial and ethnic minority groups and Native American adolescents, and adolescents in rural areas. In addition, it identifies risk and protective factors for adolescent health problems and integrates national data in order to understand the clustering of specific adolescent problems. It also evaluates options in the organization of health services and technologies available to adolescents (including accessibility and financing), assesses options in the conduct of national health surveys to improve collection of adolescent health statistics, and identifies gaps in research on the health and behavior of adolescents.

What is adolescent health? There is no easy answer to this question, and OTA's analysis was plagued throughout by issues of problem definition (see box A). How adolescent health and adolescent health problems are defined (e.g., broadly or narrowly, in biomedical, behavioral, or subjective terms) and who defines them (e.g., legislators, health providers, adolescents) have implications for assessing the extent of adolescent health problems in the population, and whether one takes an approach that is oriented to the promotion of well-being, or the prevention or treatment of problems. The definition of adolescent health also has implications for the assignment of responsibility for designing appropriate solutions to problems.

OTA did not definitively define health for adolescents, but generally considered adolescent health in broad terms. It has long been apparent that adolescent health in particular involves much more than the absence of physical disease (93). The majority of adolescents who die, for example, die not from physical diseases but from injuries due to motor vehicle accidents, suicide, or homicide. Some of these, and other, adolescent health problems stem from involvement in risk-taking behaviors (e.g., driving under the influence of alcohol, engaging in unprotected sexual activity) to which adolescents are sometimes prone.[5] Adolescent health is also affected by family and school influences and various other social and environmental factors. Thus, a broad definition of adolescent health could include aspects of the most traditional definitions of health (i.e., the presence or absence of physical disease and disability); adolescent problem behaviors (e.g., delinquency, drug use, sex); positive components of health (e.g., social competence); health and well-being from the perspectives of adolescents themselves (e.g., perceived quality of life); and social influences on health (e.g., families, schools, communities, policies).

For a variety of reasons, *OTA focused its analysis of adolescent health on adolescents ages 10 through 18.* Definitions of adolescence vary, and many observers agree that a definition based on age alone is not sufficient because of significant individual variation in the processes of adolescent development.[6] OTA decided to focus on 10- through 18-year-olds, because by the age of 10, many individuals have begun puberty. At the age of 18, the majority of adolescents (though certainly not all) are still in high school and are more or less emotionally, financially, or otherwise dependent on their parents.[7] The fact of high school graduation or legally becoming an adult creates a whole new set of contingencies and opportunities for addressing health issues. OTA felt that attempting to address

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[5] Adolescence is widely believed to be a stage during which one is more prone to take risks than at other age levels (73). However, two recent reviews of empirical evidence on risk-taking have found mixed results regarding the degree to which adolescents take more risks than do individuals at other age levels (73,125). Michael Males' analysis of incidence rates for behaviorally related health outcomes for the period 1950 to 1985 found, for example, higher rates of violent death (except for motor vehicle deaths), and higher rates of unwed pregnancy among adults ages 20 to 44 than among adolescents ages 15 to 19 (125). Furby and Beyth-Marom remark upon the dearth of research on adolescent risk-taking from a cognitive-developmental perspective, and also question whether societal concern is with adolescent "risk taking per se, or with the particular activities in which [adolescents] choose to engage [e.g., sex; alcohol, tobacco, and drug use; driving under the influence]" (125); Males concludes that "youth do indeed act like their parents' and society's children" (125). Irwin offers a related perspective, suggesting that adolescents' behaviors and health outcomes can be viewed as just beginning to resemble those of their adult contemporaries (94).

[6] See ch. 2, "What Is Adolescent Health?" in Vol. II.

[7] Currently, the age of majority (the age at which individuals are considered adults) is set at age 18 in every State but Alaska, Nebraska, and Wyoming, where the age is 19. As discussed in ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III, some minors (e.g., emancipated minors and other minors on whom States have conferred special rights) have rights that are normally reserved for adults. On the other hand, individuals who have reached the age of majority are subject to some age-related restrictions on their behavior. In all States, for example, it is illegal to purchase beverage alcohol for one's own use until age 21.

Box A—Issues of Definition in the Assessment of Adolescent Health

Although analyses by OTA and others certainly suggest a need for attention to the health of U.S. adolescents, it is important to note that what is *meant* by adolescent health is still not all that clear (93,143). Consideration of the way the health of adolescents is conceptualized is important, because such conceptions have significant consequences for:

- judgments about how healthy adolescents are;
- judgments about which adolescent health problems are most important;
- judgments about what health-related policies are justified; and
- decisions about the development and support of measures of health and health services utilization that are in turn used to help judge the need for changes in services and policies.

Attempts to define adolescent health can be informed by appraisals of the developmental goals of the adolescent period as well as by notions of what life is like during adolescence. Examination of these issues leads to support for a broad definition of adolescent health. However, existing quantitative assessments of adolescent health, and even attempts to further develop definitions of adolescent health have not caught up with the conclusion that adolescent health needs to be thought of broadly (93,143). Additional issues relating to the definition of adolescent health include who defines health and health problems, the social context of the definition of health problems, difficulties in operationalizing well-being, and the potential consequences of broadening the definition of adolescent health.

What Is Adolescence?

Adolescence can be viewed, as can all other periods of human development, in terms of the execution of an individual's "developmental tasks"[1] as well as in terms of an individual's contemporaneous sense of well-being. Thus, an important consideration in framing a definition of adolescent health is the matter of the developmental goals of the adolescent period, socially defined. Although one difficulty in gaining the attention of policymakers for some adolescent health concerns is that adolescence is often viewed *solely* as a transitional period between childhood and adulthood (93), it would be almost impossible to construct a new definition of adolescent health without considering what it is an individual should be like as she or he leaves adolescence.

The elements of a healthy and successful young adult human being are, of course, open to question, but in late 20th century United States, one could hardly argue with the notion that, as individuals reach adulthood, they should optimally be beginning to be productive, contributing members of society, who meet commitments to families and friends and the responsibilities of citizenship (28). Further, even as they meet essential social obligations, life should generally be satisfying, and individuals should have the potential to continue to grow.

But as important as the goals of the developmental period called adolescence are, the adolescent period in the contemporary United States can itself encompass one-seventh of the life span or more.[2] So, an important issue to consider, in addition to considerations of health related to the transition into adulthood, is the parameters of health *during* adolescence.[3]

Do Existing Definitions of Health and Indicators of Health Status Correspond to an Optimal Definition of Adolescent Health?

For quite some time, the concept of health was limited to physical health (251). This view was understandable as long as the causes of death and disability were largely physical in nature (251,288). An

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[1] The term "development," and the notion that there are "stages" of development, each with developmental "tasks," should be viewed with caution. Levels of human development have been somewhat arbitrarily fixed according to chronological ages (e.g., infancy, childhood, adolescence, young adulthood). Development "tasks" are skills, levels of achievement, and social adjustment considered important at certain ages for the successful adjustment of the individual, and for the individual to progress to the next "stage."

[2] Puberty can begin at age 10 or even somewhat earlier and, because of educational goals or other social factors, some individuals delay their entry into adult roles until their mid-twenties (62). (As noted elsewhere, however, OTA's assessment focused on the period ages 10 through 18.)

[3] As discussed elsewhere in this Report, the formerly popular notion that for adolescents to be normal is abnormal has been discredited (see, e.g., 62). Such notions led to the view that poor health, in particular, poor mental health, odd behavior, and subjective distress, were to be expected during adolescence.

Continued on next page

Box A—Issues of Definition in the Assessment of Adolescent Health—Continued

advance in the conceptualization of health was made when individuals' engagement in health-related individual behaviors were added to physical problems as indicators of the health status of the population (143,251). This change was made in recognition of the fact that many persistent physical health problems (e.g., heart disease, lung cancer, and the trauma resulting from "accidental" injuries) were associated, at least in part, with factors related to behaviors apparently freely chosen (251,289).[4]

In no sense, however, have widely published *measures* of health status approached the increasingly accepted World Health Organization definition that health should be defined as "complete physical, mental, and social well-being" (86). In the United States, the health status of the population is still measured primarily in terms of mortality or is inferred from the extent to which individuals seek care from physicians (289).[5] [6] Many observers agree that traditional measures of health status such as overall mortality rates and utilization of physicians are inappropriate to assessing the health of adolescents. Most of the health problems experienced by adolescents do not result in death, at least not immediately (96,107),[7] and, as discussed at length in this Report, there are reasons other than the absence of health problems for adolescents not to use the mainstream health services system.[8] One of the reasons adolescents may not use the mainstream health services system is that it is oriented primarily toward the treatment of physical disease; mental, behavioral, and social problems tend to be addressed by other systems of care.[9] **A broader view of health—emphasizing mental and social, as well as physical, aspects and a sense of well-being as well as the absence of problems—can be said to fit the period of adolescence much better than does a narrow focus on the absence of physical health problems.**[10]

Other Issues

Other issues affecting the way adolescent health is defined include the extent of adolescent participation in defining health and health problems, broader social influences on defining adolescent problems, difficulties with operationalizing well-being, and the impact on existing systems of redefining health.

As a generally (legally) powerless group, adolescents have very little say in the way health and health problems are defined and measured, but the way that adolescent health and health problems are defined and measured greatly influences adolescents' lives. The evidence is scarce on this point, but adolescents have been found to see discrepancies between issues of concern to them and issues likely to be discussed by health care providers and others who have the potential to affect adolescent health and make referrals to health care services (89,126,193). Clearly, if there is disagreement on what adolescent health and health problems are, there is likely to be disagreement on appropriate approaches to promoting health and to addressing problems.

It is further important to recognize that some things that are regarded as adolescent health problems are problems only in the context of the contemporary social environment. Possibly, for example, dropping out of high school (or not going on to college) might not be so terrible for some adolescents if jobs at living wages or other alternatives were available (330) or if academic paths were more flexible. The social environment is the product of longstanding cultural and philosophical roots in this country that are not about to be changed in a wholesale manner (25), but it is important to recognize the social environment's impact on the way adolescent health problems are defined.

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[4] The presence of a mental health problem is also considered an aspect of health (143), although Federal overviews of the health status of the population rarely include information on mental health status measures (e.g., 289). Further, many adolescent mental disorders are defined in behavioral terms (9).

[5] Relatively recent efforts to make measures of mortality more relevant to younger populations, such as estimates of premature mortality (e.g., years of potential life lost (289)), constitute an important advance, however.

[6] Additional issues concerning the information available about adolescent health status, even using widely accepted indicators as measures, are discussed in app. C, "Issues Related to the Lack of Information About Adolescent Health and Related Services."

[7] In the longer term, life expectancy may be shortened by use of alcohol, tobacco, and drugs, and other behaviors during adolescence.

[8] See this Volume and chs. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," 16, "Financial Access to Health Services," 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," and 18, "Issues in the Delivery of Services to Selected Groups of Adolescents," in Vol. III.

[9] See Vol. II of this Report, "Background and the Effectiveness of Selected Prevention and Treatment Services." Even dental and nutrition services, which apply to the body, are separate from the so-called primary health care system.

[10] Although adolescents do have physical health problems, they are *relatively* free of the kinds of life-threatening physical diseases that affect the very young or very old.

A further social dilemma concerns operationalizing the concept of "complete. . .well-being" (86). Although broadly acceptable definitions of complete well-being could be socially constructed, they would be difficult to devise because to a large extent complete well-being is inherently a subjective notion.

Finally, it is important to note certain potential barriers to changes in the way adolescent health is conceptualized. One is that adopting broader definitions of health could lead to either a broadening of what is considered the health care system (e.g., to include the mental health, substance abuse, social services, nutrition, recreation and fitness, and other systems of care for adolescents) or the broadening of skills of medical providers. Enlarging the definition of the health care system might be expected to upset current hierarchical arrangements among caregivers. On the other hand, given the range of expertise required to address all the health needs of adolescents under an expanded conceptualization of adolescent health, multiplying the number of skills required of a single type of practitioner seems unrealistic.

A second potential effect of expanding the definition of health for adolescents is related to the expanded notion of a health care system and is important because it can have cost implications. If a broader definition of health is adopted, the range of "health-related problems" amenable to possible intervention (i.e., health services) becomes larger. If an intervention is defined as a health-related service, it becomes a potential target for the commitment of public funds (e.g., under Medicaid) or private third-party reimbursement. Such a consequence is not inevitable, but it is worth considering as an explanation for why an expanded definition of adolescent health may be resisted.

Conclusions

Definitional issues in adolescent health will undoubtedly persist as the findings of OTA's report, and others related to adolescent health (e.g., 6,29,51,52,137,148,150,152,153), are considered by local and national policymakers, parents, researchers, and adolescents themselves. Further, many of these issues are relevant to populations other than adolescents. However, a broader definition of health is especially important for adolescents because adolescence is a critical transitional period (62,84) and because narrower definitions of health can lead to the neglect of important health issues during adolescence.[11]

New constructs and theoretical perspectives, OTA believes, should probably include consideration of the specific individual involved, the specific health concern, and the individual's social environment. In addition to traditional measures of physical health and the newer behavioral measures, a broad range of indicators of optimal functional status (emotional and social, including perceived quality of life) should be considered by researchers, health care providers, and policymakers.

A broad definition of health would therefore include aspects of the most traditional definitions (i.e., the presence or absence of physical disease and disability); consideration of adolescents' health-compromising behaviors; positive components of health (e.g., social competence, health-enhancing behaviors); and health and well-being from the perspectives of adolescents themselves (e.g., perceived quality of life). A fully realized view of adolescent health would also consider the impact of social (e.g., families, schools, communities, policies) and physical (e.g., fluoridation, automobile and highway design and construction) influences on health and would be sensitive to the developmental changes that occur during adolescence.

However desirable new constructs are, the possible consequences of expanding the definition of health for adolescents should be considered.

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[11] This consequence was noted in the materials announcing the World Health Organization meetings on the health of youth (334a).

SOURCE: Office of Technology Assessment, 1991.

these issues as well as those affecting younger adolescents was probably too ambitious an undertaking.[8]

In many cases, data on adolescents ages 10 through 18 are not available. Where necessary, OTA relied on data aggregated for age groups that included some or all of the ages that are the focus of this Report.

Organization of the Report

OTA's Adolescent Health Report has three volumes:

- Volume I, "Summary and Policy Options,"
- Volume II, "Background and the Effectiveness of Selected Prevention and Treatment Services," and
- Volume III, "Cross-Cutting Issues in the Delivery of Health and Related Services."

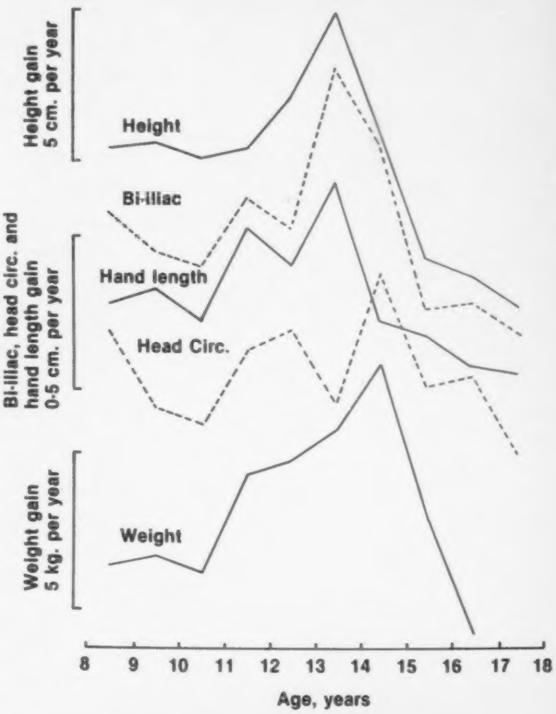
This volume, Volume I, summarizes the findings of OTA's Report and presents the policy options arising from OTA's analysis. First it presents the major findings and policy options. Then it summarizes specific findings and additional policy options from chapters in Volumes II and III of the Report. Finally, it presents a discussion of selected barriers to and opportunities for change. Extensive bibliographic citations and data sources for health problems and utilization of specific services are cited in the individual chapters in Volumes II and III. A table of contents listing the chapters and appendixes in each volume is included in appendix A, "Method of the Study."

Major Findings

Are American Adolescents Healthy?

OTA's analysis is based on a broad range of measures of adolescent health and a correspondingly wide variety of sources of data. OTA's analysis, described below, as well as analyses by other groups (8,29,148,150,153), suggests that **the conventional wisdom that American adolescents as a group are so healthy that they do not require health and related services is not justified.** On the other hand, **the seemingly contradictory conventional wisdom that adolescence is and should be a problem period—that to be normal is abnormal—is also unjustified.**

Figure 1—Growth Spurts During Adolescence



SOURCE: Figure 5 on p. 13 in J.M. Tanner, *Growth at Adolescence*, 2d ed. (Oxford, England: Blackwell Publications, 1962) based on L. Reynolds and G. Schoen, "Growth Patterns of Identical Triplets From 8 to 18 Years," *American Journal of Physical Anthropology* 5:165-200, 1947. Copyright © 1947 by John Wiley & Sons. Reprinted by permission of Wiley-Liss, a Division of John Wiley & Sons.

Adolescence—roughly the second decade of life—is a period of profound biological, emotional, intellectual, and social transformation, unmatched perhaps by any other period in life. The physical changes are dramatic. One sees not only changes in height, weight, and head size (see figure 1), but also

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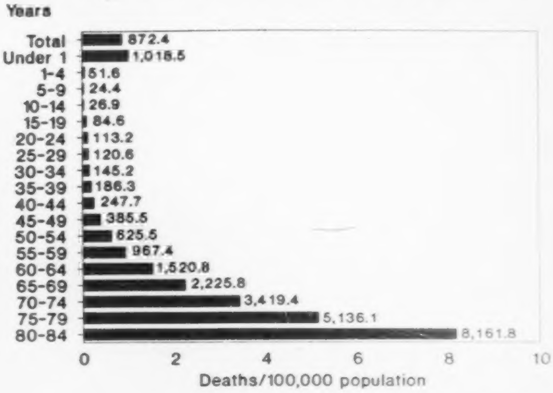
[8] One should not interpret OTA's decision to limit its focus to 10- through 18-year-olds as an indication that young people of college age have no health-related problems deserving of attention. Young people of college age have a number of concerns. For example, the health insurance status of individuals of college age is often ambiguous (159); employment opportunities for non college youth are minimal (330); and new health problems may begin to emerge (263).

Photo credit: Education Week

Adolescence is a period of profound biological, emotional, intellectual, and social transformation.

changes in facial structure and facial expression and the "spectacular development of the reproductive system" (202). There may be emotional upheavals. Intellectual capacity deepens, and adolescents gradually become capable of higher order thinking and reasoning. The expectations of the larger society and of family members, teachers, friends, and others in the adolescent's immediate environment change, sometimes leading to confusion about issues of independence, conformity, and responsibility. These extraordinary events, though perhaps related, are typically discontinuous—they do not occur smoothly, predictably, or simultaneously. Furthermore, some adolescents are early and others are late "bloomers" (62).

Figure 2—Overall Death Rates Among the U.S. Population by Five-Year Age Groups, 1987[a]



[a]Although this OTA report focuses on adolescents ages 10 to 18, the data here are for 5-year age groups and therefore include 19-year-olds.

SOURCE: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, unpublished mortality data, Hyattsville, MD, 1990.

If, as an overview of adolescent development suggests, adolescence is often a somewhat turbulent period, it may be surprising that adolescents appear by some traditional measures—i.e., mortality rates—to be among the healthiest of Americans. Adolescents as a group have among the lowest overall death rates of all Americans in the United States (see figure 2).[9] The leading causes of death among adolescents are somewhat different from those of other age groups, however, with adolescents being more likely than younger and older Americans to die of injuries

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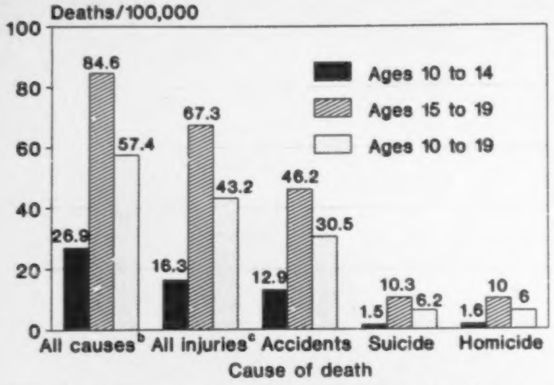
[9] Adolescents also have the lowest number of outpatient visits to office-based physicians per person per year and are among the least likely to be hospitalized, but the implications that can be drawn from those statistics about adolescents' needs for services are not entirely clear. Various factors may affect adolescents' utilization of mainstream health services, and many of them are discussed below and in several chapters in Vol. III, specifically, ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents"; ch. 16, "Financial Access to Health Services"; ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking"; and ch. 18, "Issues in the Delivery of Services to Selected Groups of Adolescents."

Figure 3—Death Rates Among U.S. Adolescents Ages 10 to 19,[a] by External Causes of Death, 1987



[a]Although this OTA report focuses on adolescents ages 10 to 18, the data here are for 5-year age groups and therefore include 19-year-olds.

[b]"All causes" includes injuries and diseases. The rates at which causes of death other than injuries occurs in the adolescent population are relatively small—e.g., malignant neoplasms, the next highest cause of death after injuries, occurs in 10- to 19-year-olds at a rate of 3.7 per 100,000 adolescents ages 10 to 19.

[c]"All injuries" includes accidents, suicide, homicide, and other injuries.

SOURCE: Office of Technology Assessment, 1991, based on U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, unpublished 1987 mortality rates, Hyattsville, MD, 1990.

(including accidental injuries,[10] suicide, and homicide[11]) (see figures 3 and 4).

Up-to-date information on U.S. adolescents' health is often unavailable or deficient. This problem is discussed further in appendix C, "Issues Related to the Lack of Information About Adolescent Health and Health and Related Services." Nevertheless, available data indicate that American adolescents have a number of health problems that should be—and many have been—of intense national concern.

- **Family problems**—Some adolescents come from homes with high levels of stress or conflict and have experienced physical, sexual, or emotional abuse. In 1985, an estimated 120,000 adolescents were in foster care (330). The rate of maltreatment (defined as physical, emotional, or educational neglect, or physical, emotional, or sexual abuse) is believed to be higher among adolescents than among younger children (8,259). Data from the U.S. Department of Health and Human Services (DHHS) National Center on Child Abuse and Neglect's national incidence study suggest that between 620,000 and 700,000 adolescents ages 10 to 17 were maltreated in 1986 (259). The consequences of abuse include depression and other psychological difficulties during adolescence and adulthood and may include delinquency (329) and homelessness (259).
- **School problems**—On average, 12.6 percent of 16- to 24-year-olds living in households report not having completed a high school education (the so-called status dropout rate (250)); the proportion is higher among Hispan-

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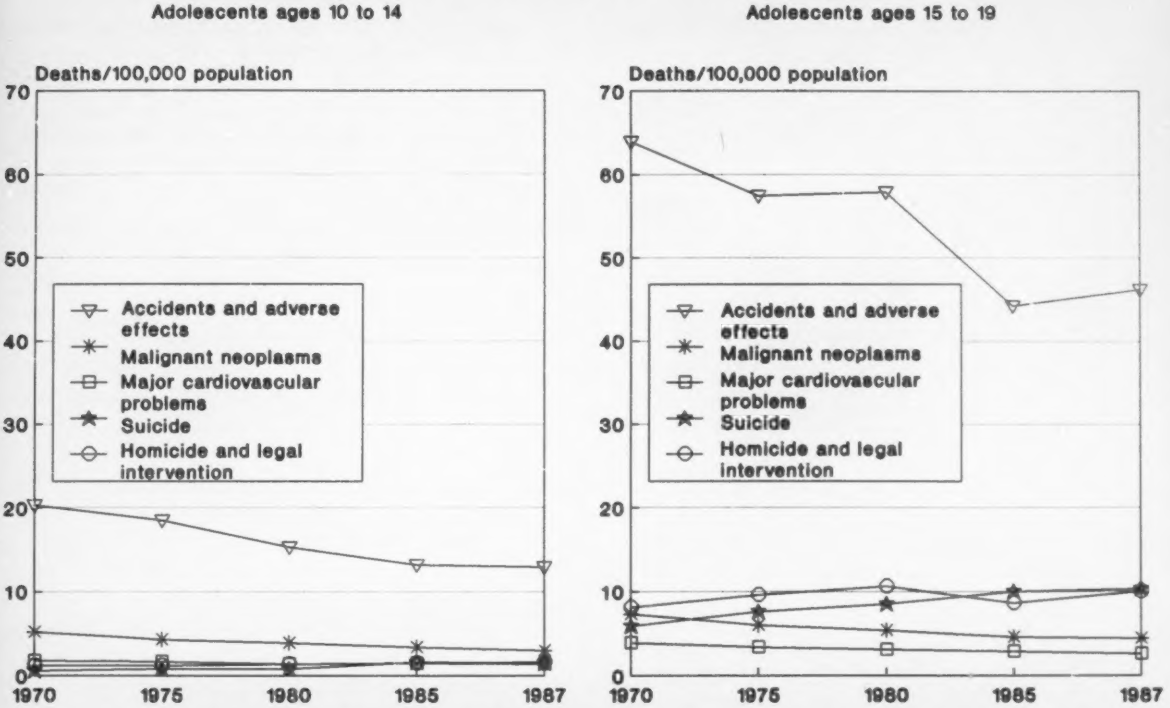
[10] To make this Report more accessible to the lay reader and for other reasons, OTA has chosen to use the term accidental injury in this Report. The term preferred by those in the injury prevention community, however, is unintentional injury (e.g., 184). Those who prefer the term unintentional injury believe that the term accidental injury implies that injuries cannot be prevented, whereas the term unintentional injury implies that while an individual may not have consciously **intended** to hurt him or herself, some action taken or not taken may have prevented the injury. Perhaps to overstate this perspective somewhat, all injuries are thus avoidable. The position that true "accidents" do not occur (that is, by chance, entirely without cause) correctly brings attention to injuries as a public health problem to which additional preventive interventions can and should be applied, but it seems to be unprovable. Use of the term "unintentional" also may have the unfortunate effect of placing the onus of causation (and responsibility for precautions) exclusively on the person who is injured, although in fact unintentional injuries may be caused, although unintentionally, by persons, organizations, or systems other than the victim.

[11] The balance between injury-related deaths (often called "external" causes) and deaths resulting from "natural" causes changes over the life span. (It has also changed over time (288).) For Americans ages 1 to 4 , "natural" causes of death (28.5 per 100,000 population in 1985) are somewhat greater than "external" causes of death (23.0 per 100,000 population in 1985) (288); by ages 5 through 9, "external" causes (13.0 per 100,000 population in 1985) begin to account for slightly more deaths than "natural" causes (11.8 per 100,000 population in 1985) (288). In the age group 10 to 14, the ratio of "external" to "natural" causes of death is greater (16.5 deaths per 100,000 population for "external" causes v. 11.4 deaths per 100,000 population for "natural" causes, in 1985), and by ages 15 to 19, "external" causes of death (63.5 deaths per 100,000 population) clearly predominate over "natural" causes (17.7 deaths per 100,000 population (288). (In the analysis relied on for the foregoing comparisons, "external" causes of death include those from motor vehicle injuries, fire and flames, drownings, homicide and suicide; "natural" causes of death include those from malignant neoplasms (cancer), congenital anomalies, and heart disease (288).) In contrast, the leading causes of death for persons ages 25 to 64 are cancer (133 deaths per 100,000 population in 1987) and coronary heart disease (135 deaths per 100,000 population in 1987), followed by accidental injuries (approximately 30 deaths per 100,000 population in 1987), stroke (approximately 22 deaths per 100,000 population in 1987), and suicide (approximately 20 deaths per 100,000 population in 1987) (260); for persons 65 and over, heart disease, cancer, stroke, chronic obstructive lung disease, and pneumonia and influenza predominate (289).

Figure 4—Trends in Death Rates for the Five Leading Causes of Death Among U.S. Adolescents Ages 10 to 14 and Ages 15 to 19, 1970-87



SOURCE: Office of Technology Assessment, 1991, based on U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, *Vital Statistics of the United States 1970, Vol. II—Mortality* (Washington, DC: U.S. Government Printing Office, 1974); U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, *Vital Statistics of the United States 1975, Vol. II—Mortality* (Washington, DC: U.S. Government Printing Office, 1979); U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, *Vital Statistics of the United States 1980, Vol. II—Mortality*, Pub. No. (PHS) 85-1101 (Washington, DC: U.S. Government Printing Office, 1985); U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, *Vital Statistics of the United States 1985, Vol. II—Mortality*, Pub. No. (PHS) 88-1102 (Washington, DC: U.S. Government Printing Office, 1987); and U.S Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, unpublished 1987 mortality data, Hyattsville, MD, 1990.

ics, blacks, and persons living in central cities (see figure 5).[12] According to one observer, high dropout rates are one indication of the failure of schools to meet their students' educational or social growth needs (74). Adolescents drop out of school for a variety of reasons—boredom or academic failure, health problems (e.g., mental health problems, substance abuse problems, pregnancy), and family financial or other problems. Whatever their reasons for their dropping out, however, adolescents who do not complete high school will likely be unable to realize their potential in the U.S. labor force and are likely to be at increased risk for a wide variety of health, economic, and social problems (e.g., underemployment, un-

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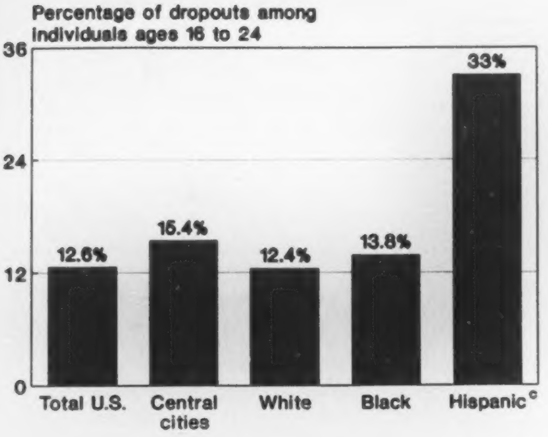
[12] It is important to note that calculations of successful school completion (and conversely, school problems) are highly dependent on the definition used, the data source, and the level of detail to which the data are pursued. Shown here is the average proportion of those individuals ages 16 to 24 *living in households* (and thus responding to the household-based Current Population Survey) who have not completed high school (including the completion of the general educational development (GED) test). However, if the same data source is used, but high school graduates as a proportion of 17-year-olds in the population is used as the indicator of successful school completion, then an average of only 74 percent of 17-year-olds have successfully completed high school (249). Another indication is the graduation rate defined as the percentage of 9th graders who have graduated 4 years later (71.2 percent in 1989 (250a)). Graduation rates differ considerably by State and, within States, by school district and race, ethnicity, and socioeconomic status of the school population (e.g., 29; and see ch. 4 in Vol. II, "Schools and Discretionary Time"). However, all sources are consistent in that school problems tend to be more prevalent among Hispanic, black, and central city adolescents.

Figure 5—High School Dropout Rates in the United States, 1989[a] [b]



[a]Dropout rates shown in this figure are status dropout rates (the proportion of individuals of a specified age who are not enrolled in school and have not finished high school at any given point in time) among individuals ages 16 to 24 as of October 1989.

[b]The data on which this figure is based are Current Population Survey data from the U.S. Department of Commerce, Bureau of the Census.

[c]Hispanics may be of any race.

SOURCE: Office of Technology Assessment, 1991, based on U.S. Department of Education, Office of Education Research and Improvement, National Center for Education Statistics, *Dropout Rates in the United States*, NCES 90-659 (Washington, DC: September 1990).

employment, welfare dependency, and homelessness) (79).[13]

- **Lack of recreational opportunities**—Opportunities for adolescents to engage in recreational or other activities that are attractive, satisfying, conducive to health, and acceptable to the adult community during their discretionary (nonschool) time are often perceived by adolescents and other informed observers to be inadequate.
- **Chronic physical illnesses**—Many adolescents experience acute physical problems, such as acute respiratory illnesses, which are the leading cause of school-loss days, but an estimated 5 to 10 percent of adolescents experience a serious chronic physical condition, for example, hay fever or allergic rhinitis without asthma (9.1 percent of adolescents), chronic sinusitis (9.0 percent), asthma (5.8 percent), a "deforming or orthopedic impairment" (5.4 percent), chronic bronchitis (3.9 percent), migraine headaches (2.9 percent), heart disease (2.2 percent), hearing impairments (2.1 percent), and visual impairments (1.9 percent)[14] (291).[15] Another indication of the prevalence of serious chronic conditions among adolescents, but which includes emotional disorders, is the finding that approximately 5 percent of 10- to 18-year-olds in 1988 had a limitation in a major activity (i.e., were not able to attend school[16])

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[13] OTA did not consider how adolescents' involvement in work affects their health. According to the W.T. Grant Foundation, about one-third of all high school students hold part-time jobs in any given week, and three-quarters of all high school seniors work an average of 16 to 20 hours a week (79). Some evidence suggests that the income (and, perhaps, peer and adult associations) associated with work are a risk factor for illicit drug use (64,80,135,182,197). On the other hand, the opportunity for adolescents to participate in work or other constructive activity may have positive effects on adolescents' health such as increased self-esteem resulting from the gaining of competency.

[14] These most prevalent conditions are not necessarily the causes of the major limitations in activity noted below; the calculations of activity limitations and prevalence of conditions were done separately (291). Further, the fact that the National Health Interview Survey sample of adolescents is so small (and the fact that the sample is drawn solely from the noninstitutionalized population) means that the extent of lower prevalence of very serious chronic conditions such as muscular dystrophy, Down's syndrome, cystic fibrosis, hemophilia, seizure disorders, autism, and arthritis is not known. Another important point is that drawing the information from an informant rather than from the adolescents themselves may limit the reporting of some conditions. Further details on the prevalence of chronic physical conditions, and discussions of variations in definitions of chronic and serious, can be found in ch. 6, "Chronic Physical Illnesses: Prevention and Services," in Vol. II.

[15] Gortmaker and Sappenfield's comprehensive review can also be used to support the estimate of 5 to 10 percent prevalence in chronic problems, but also with the caveat that the conditions included in the Gortmaker and Sappenfield review varied in severity (78). Based on a variety of sources, Gortmaker and Sappenfield calculated that 13.3 percent of individuals ages 0 to 20 had a chronic condition, with the most prevalent conditions being asthma (3.8 percent; 1 percent of which was moderate to severe), visual impairments (3 percent), mental retardation (2.5 percent), and hearing impairments (1.6 percent) (78). If, as Gortmaker and Sappenfield estimated, 90 percent of the individuals with a chronic disorder survived until age 20, and assuming that all chronic disorders listed by Gortmaker and Sappenfield persisted into adolescence, *12 percent* of 19-year-olds would have a chronic disorder. Assuming that asthma is not as severe a problem for adolescents as for younger children (and to make a rough adjustment, excluding the 1.8 percent of asthma that is not moderate to severe), and excluding mental retardation (2.5 percent of 0- to 20-year-olds), autism (0.04 percent), and Down's syndrome (0.1 percent) from the total (in order to be comparable to OTA's estimate based on National Health Interview Survey data and because children and adolescents with such disorders are served by a distinct service system), would reduce the proportion of adolescents with a chronic physical condition to approximately *8 percent*. Perhaps not all of these conditions would be considered "serious" under the conventional definition. Conditions are typically deemed serious if they result in a limitation in a major activity.

[16] In surveys such as the National Health Interview Survey, persons are classified in terms of the major activity usually associated with their age group; attending school is considered the major activity for the age group 5 to 17. Persons are not classified as having a limitation in a major activity unless one or more *chronic condition* is reported as the cause of the activity limitation (286).

due to a chronic condition (291). However, fewer than 1 percent were *completely* unable to carry on a major activity (291).

Two problems that may not be considered serious in and of themselves, but are of concern to many adolescents, are acne and menstrual distress (dysmenorrhea). About 9 percent of adolescents experience serious, chronic acne (291), and perhaps 50 percent of female adolescents have missed school or work because of menstrual distress (100,331). These problems are noteworthy because they suggest a wide gulf between what adolescents and what adults feel are important issues to be addressed by the health service delivery system.

- **Nutrition and fitness problems**—Adolescent-specific data on nutrition and fitness, aside from average nutrient intake information, are limited, but if one accepts the conventional wisdom concerning nutrition and fitness needs, it appears that many adolescents experience some nutritional or fitness problem (usually mineral deficiencies, imbalanced diets, or overweight or obesity). According to data from a variety of sources, female adolescents are especially prone to nutritional deficiencies. Those female adolescents who are pregnant (e.g., 275) or athletes are particularly prone to nutritional problems. National information on the nutritional and fitness problems of poor adolescents and of many racial and ethnic minority adolescents is not available.
- **Dental and oral health problems**—Adolescence is a pivotal period with respect to oral and dental health, in part because of the physical changes of adolescence and in part because of the transition from childhood to increasing personal responsibility for oral hygiene. Some adolescents do not have access to fluoridated water supplies or are unable to afford regular dental care, and for these adolescents and others (e.g., those with rampant caries), dental caries remains a significant problem. In addition, many U.S. adolescents need moderate treatment for gum disease, and some groups of adolescents (e.g., American Indians) have more serious periodontal problems.[17]
- **Acquired immunodeficiency syndrome (AIDS) and other sexually transmitted diseases (STDs)**—Many U.S. adolescents are sexually active and at risk for problems associated with involvement in unprotected sexual intercourse.[18] In 1988, more than half of 15- to 19-year-olds reported having had sexual intercourse in the last 3 months (68), but only 22 percent of sexually active female adolescents ages 15 to 19 reported current use of condoms (141). Condoms are the only known protection against AIDS, human immunodeficiency virus (HIV) infection and STDs for the sexually active. Recent data from the Centers for Disease Control suggests that, in 1989, 30 percent of newly reported gonorrhea cases, and 10 percent of newly reported syphilis cases in the United States occurred among 10- to 19-year-olds (12). The percentages of U.S. adolescents estimated to have specific STDs vary, depending on the disease and population on which the data are based (see figure 6).
- **Pregnancy and parenting**—About 1 million U.S. adolescents become pregnant each year; about half of these adolescents obtain abortions, and about half of them give birth (see figure 7). U.S. adolescents are having children out of wedlock at dramatically higher rates than in the past. About 65 percent of births to U.S. adolescents in 1988 were out-of-wedlock births (294). Adolescent mothers and their infants are

Photo credit: March of Dimes Birth Defects Foundation

About half a million U.S. adolescents give birth every year.

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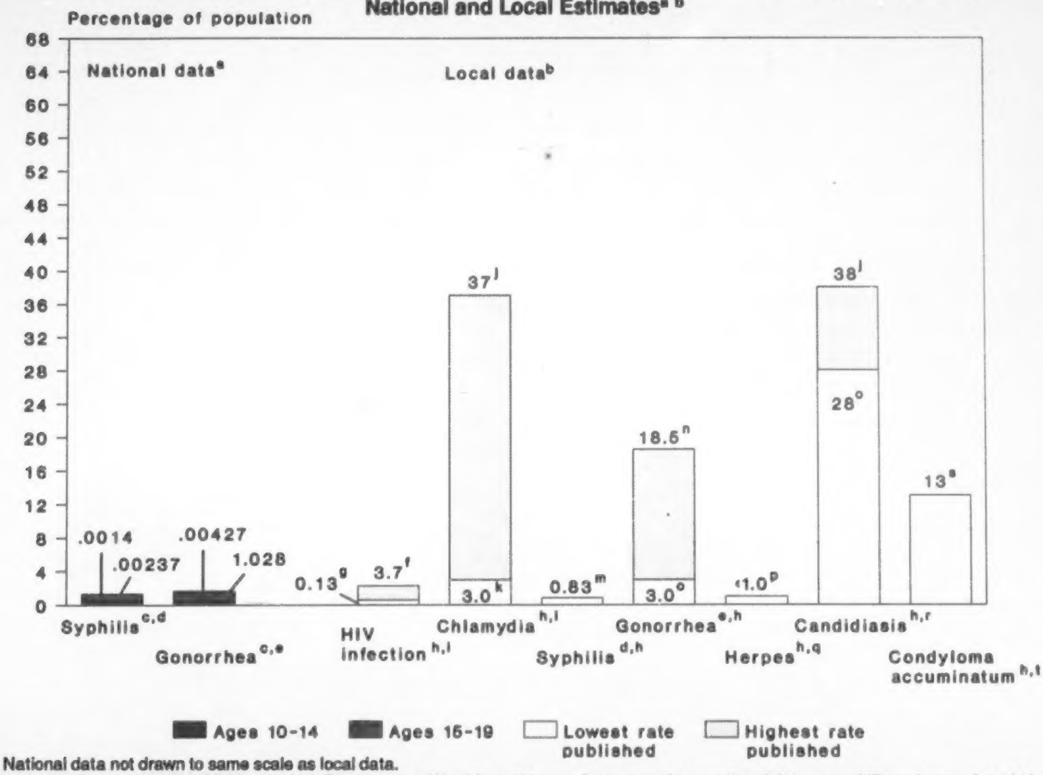
[17] By the end of adolescence, for example, two out of five American Indian dental patients have destructive periodontal disease with bone loss (295).

[18] *Unprotected sexual intercourse* refers to sexual intercourse without the use of condoms to prevent the transmission of AIDS and STDs *and* without the use of contraception to prevent pregnancy.

Figure 6—U.S. Adolescents With HIV Infection or Sexually Transmitted Diseases (STDs): National and Local Estimates[a] [b]



NOTE: National data not drawn to same scale as local data.

[a] The Centers for Disease Control (CDC) in the U.S. Department of Health and Human Services collects national data on syphilis and gonorrhea, but national data on other STDs are not available. CDC recommends that States report particular STDs, but has no authority to require such reporting (48,274). Thus, there is no uniformity in State reporting requirements for STDs. Even in the States that do report STDs, there are incomplete reporting requirements for STDs, differences in reporting by public and private health sources, and limitations in the specificity of diagnostic tests (17,123).

[b] Local data are obtained from different studies using varying sample sizes. The studies and selected pertinent details of each study are listed in footnotes below.

[c] This is a population incidence rate, which is the measure of the number of new cases of a particular disease or condition occurring in a population during a given period of time.

[d] Syphilis is caused by the bacterium *Treponema palladium.*

[e] Gonorrhea is caused by the bacterium *Neisseria gonorrhoeae.*

[f] This figure is from a study conducted on 510 runaway and homeless youth, age 18 or under, who were residing in Covenant House in New York City in 1987-88 (200).

[g] This figure is from a study conducted on 12,344 adolescent mothers (age 18 or under) of newborns, who were age 20 or less, in upstate New York in 1987-88 (162). The same study tested 12,871 adolescent mothers (age 18 or under) of newborns in New York City and found a clinical prevalence percentage of 0.72.

[h] This is a clinical prevalence rate, which is a measure of the number of individuals in a given clinical population who have a specific disease or other condition at a designated time (or during a particular period).

[i] HIV (human immunodeficiency virus) is the virus associated with acquired immunodeficiency syndrome (AIDS).

[j] This figure is from a study conducted on 115 low-income, pregnant, predominantly black females, ages 13 to 19, who were receiving prenatal care in the Johns Hopkins Adolescent Pregnancy Program (69).

[k] These data are from a study conducted on 948 sexually active asymptomatic adolescent males, ages 13 to 19, who were attending teen or detention clinics in San Francisco, CA (188).

[l] Chlamydia infection (formal name, "nongonoccal urethritis") is caused by the bacterium *Chlamydia trachomatis.*

[m] This figure is from a study conducted on 2,521 adolescent males and females, ages 9 to 18, who were in the New York City Juvenile Detention Center (4).

[n] This figure is from a study conducted on 567 adolescent males and females who were visiting the Adolescent and Young Adult Clinic of the Children's National Medical Center in Washington, DC (45).

[o] This figure is from a study conducted on 100 low- and middle-income, sexually active, adolescent females from urban areas, who were attending the Adolescent Clinic of the Children's Hospital Medical Center in Cincinnati, OH (185).

[p] This figure is from a study conducted on 376 inner-city, low-income females, ages 12 to 18, who were seeking contraceptive counseling at the Teen Accent Clinic in Birmingham, AL (163).

[q] Herpes is caused by the herpes simplex virus (HSV).

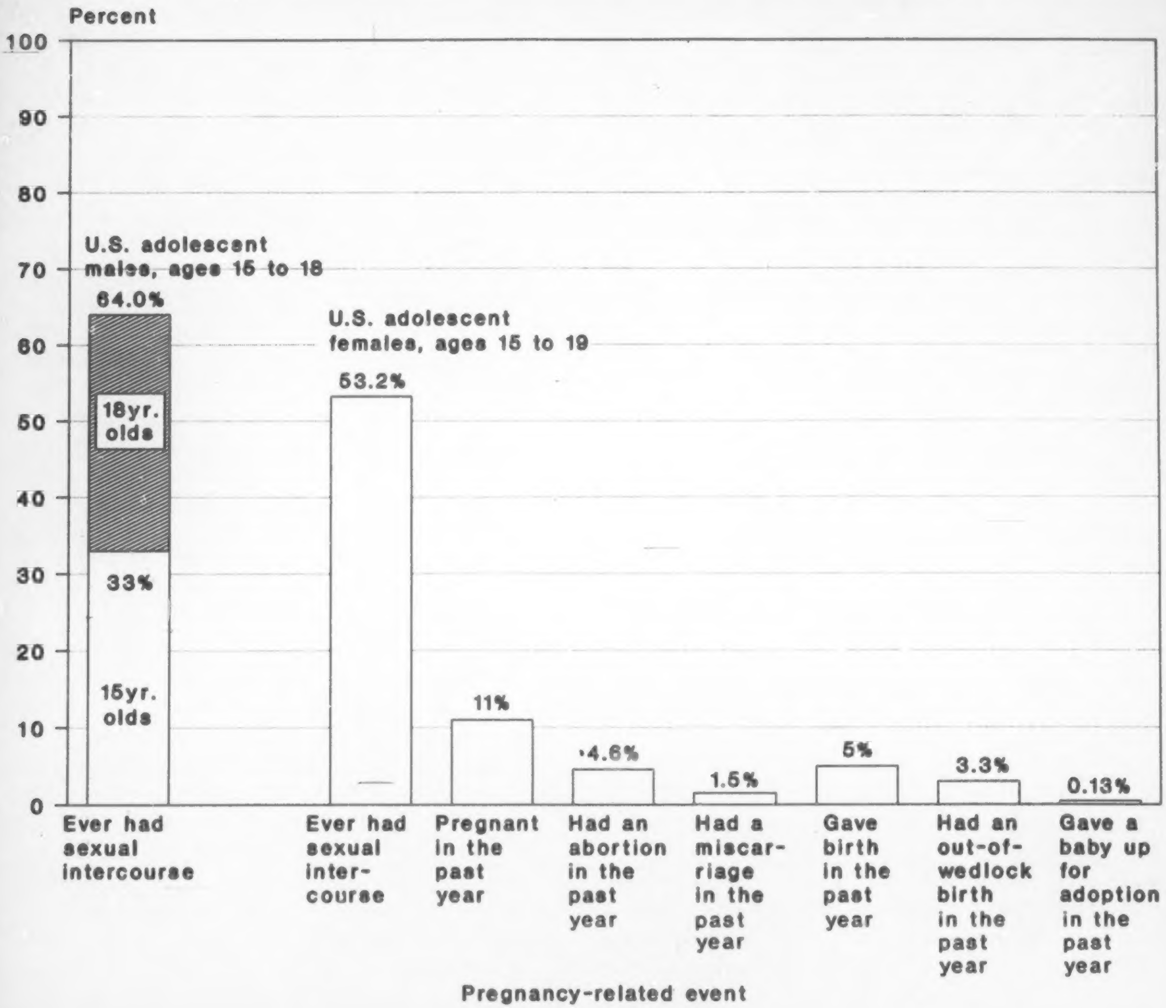
[r] Candidiasis is caused by the bacterium *Candidiasis albicans.*

[s] This figure is from a study conducted on 89 low-income, sexually active, primarily black females, ages 13 to 19, who were attending an adolescent clinic of the University of Maryland Hospital in Baltimore, MD (128).

[t] Condyloma acuminatum is caused by human papillomavirus.

SOURCE: Office of Technology Assessment, 1991, based on the sources noted above.

Figure 7—Overview of U.S. Adolescent Pregnancy and Parenting[a]



[a] Percentages of sexual intercourse, pregnancies, and out-of-wedlock births were tabulated from 1988 data. Percentages of abortions, miscarriages, and births were tabulated from 1984 data. Percentages of adoptions were tabulated from 1982 data.

SOURCE: Office of Technology Assessment, 1991, based on data from the following sources: Adolescent males ever had sexual intercourse: F.L. Sonnestein, J.H. Pleck, and L.C. Ku, "Patterns of Sexual Activity Among Adolescent Males," paper presented at the annual meeting of the Population Association of America, Toronto, Canada, May 1990. Adolescent females ever had sexual intercourse: J.D. Forrest and S. Singh, "The Sexual and Reproductive Behavior of American Women, 1982-1988," *Family Planning Perspectives* 22(5):206-214, 1990. Pregnant in the past year: U.S. Congress, Congressional Budget Office, *Sources of Support for Adolescent Mothers* (Washington, DC: September 1990). Had an out-of-wedlock birth in the past year: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Division of Vital Statistics, "Advance Report of Final Natality Statistics, 1988," *Monthly Vital Statistics Report* 39 (No. 4, suppl.), DHHS Pub. No. (PHS) 90-1120 (Hyattsville, MD: Aug. 15, 1990). All others: National Academy of Sciences, National Research Council, Commission of Behavioral and Social Sciences and Education Committee on Child Development Research and Public Policy, Panel on Adolescent Pregnancy and Childbearing, *Risking the Future: Adolescent Sexuality, Pregnancy and Childbearing, Vol. I,* C.D. Hayes (ed.) (Washington, DC: National Academy Press, 1987).

Photo credit: Education Week

Adolescents at one forum expressed their belief that alcohol use is the most prevalent drug problem among U.S. students. This belief is supported by national survey data.

typically in need of substantial services, ranging from child care to housing.

- **Mental health problems**—According to a survey of Minnesota students, an average of one-quarter of adolescents report being ''sad, discouraged, and hopeless,'' experiencing extreme stresses and strains, dissatisfied with their personal lives, or ''tired, worn out, exhausted'' (209). A national survey of 8th and 10th graders found that 34 percent of female students and 15 percent of male students reported feeling ''sad and hopeless'' during the month before the survey; 21 percent of female students and 11 percent of male students reported that it is ''very hard'' for them to deal with stressful situations at home and at school; and 18 percent of female students and 9 percent of male students reported that they often felt that they had nothing to look forward to (10). Diagnosable mental disorders,[19] ranging from anxiety and depression to schizophrenia (but primarily including conduct disorders), are experienced by 18 to 22 percent of adolescents (e.g., 43). In 1987, 15 percent of 10th graders reported having made a suicide attempt (10). Although many adolescents with mental health problems do not get treatment, psychiatric hospitalizations of adolescents have recently been increasing (26,326).
- **Alcohol, tobacco, and illicit drug abuse**[20]—The consumption of alcohol places adolescents at risk of immediate health problems (e.g., motor vehicle accidents) (315). In recent surveys of U.S. students, about one-third reported that they had had five or more alcoholic drinks on at least one occasion in the previous 2 weeks (10,252). Adolescent participants at one forum expressed their belief that alcohol use is the most prevalent drug problem among U.S. students (7), and that belief is supported by data from a 1988 household survey on drug abuse conducted by the National Institute on Drug Abuse in DHHS (see figure 8) (263).[21]

Nicotine, most commonly in the form of cigarettes, is used by a substantial number of U.S. adolescents. The 1988 household survey conducted by the National Institute on Drug Abuse found that 11.8 percent of 12- to 17-year-olds living at home had smoked cigarettes in the last month (see figure 8). It has been well documented that cigarette smoking over time places individuals at risk for lung cancer and other life-threatening health problems later in life. The use of smokeless tobacco also has significant health consequences (296), but national surveys such as the household survey conducted by the National Institute on Drug Abuse do not request information about smokeless tobacco use.[22]

The use of illicit drugs such as marijuana, cocaine, inhalants, hallucinogens, heroin, or

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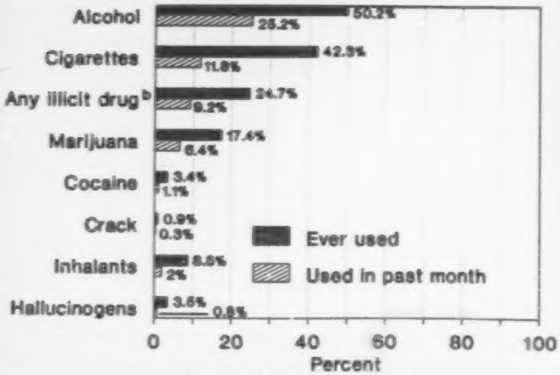
[19] *Diagnosable mental disorders* are disorders included in the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders*, 3rd ed., revised, commonly known as DSM-III-R (9).

[20] What constitutes adolescent substance abuse—any use at all or ''problem'' use—is a matter of controversy. The Office of Substance Abuse Prevention in DHHS is of the view that any psychoactive substance use by adolescents should be prevented (272). The American Psychiatric Association distinguishes between substance use, substance abuse, and substance dependence but these categories apply primarily to adults (9). These distinctions, and laws prohibiting the sale of alcohol to adolescents in all States, and tobacco to adolescents in many States (see ch. 12, ''Alcohol, Tobacco, and Drug Use: Prevention and Services,'' in Vol. II), also lead to other concerns about terminology. In this Report, OTA uses the terms ''illicit'' or ''illegal'' drugs to characterize *only* those substances that it is illegal for U.S. individuals *of all ages* to use (e.g., cocaine, marijuana).

[21] The household survey on drug abuse conducted by the National Institute on Drug Abuse sampled about 3,000 12- to 17-year-olds living at home. Homeless and institutionalized adolescents have not been systematically surveyed. Local surveys and clinical experience have found that adolescents who are homeless or institutionalized typically have higher rates of psychoactive substance use than do adolescents living at home.

[22] The one-time National Adolescent School Health Survey found that an average of 4.4 percent of 10th grade males used smokeless tobacco daily (10).

Figure 8—Overview of U.S. Adolescents' Use of Alcohol, Cigarettes, and Illicit Drugs, 1988[a]



[a] Data are from the 1988 Household Survey on Drug Abuse conducted by the National Institute on Drug Abuse (NIDA) for 12- to 17-year-olds. The NIDA Household Survey on Drug Abuse measures the prevalence of drug use among the American household population age 12 and over and therefore does not include homeless or institutionalized adolescents. The sample of adolescents in the 1988 NIDA survey was quite small (3,095 in 1988, including 747 blacks, 763 Hispanics, and 67 other nonwhites).

[b] Any illicit drug includes marijuana, inhalants, cocaine, hallucinogens, heroin, and nonmedical uses of psychotherapeutics.

SOURCE: Office of Technology Assessment, 1991, based on data from U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse, *1988 National Household Survey on Drug Abuse* (Rockville, MD: 1989).

nonprescription use of psychotherapeutics (sedatives, tranquilizers, stimulants, or analgesics) appears to be far less common among U.S. adolescents living at home than the use of alcohol or tobacco (see figure 8). The problems that illicit substances pose for the adolescents who abuse or sell them, however, can be substantial.

- Delinquency—In 1988, there were 1.6 million arrests of adolescents (301), and in 1987, about 700,000 adolescents were confined to public or private juvenile justice facilities (306,308). In recent years, the number of U.S. adolescents confined to public and private juvenile facilities for delinquent acts[23] has been increasing (305,306). Most of the increase has apparently been due to an increase in the number of adolescents confined for minor offenses[24] (including status offenses[25]) rather than serious offenses (306,310).[26] [27] Adolescents confined to public juvenile justice facilities are disproportionately black males (310). Many adolescents confined in juvenile justice facilities have serious health problems upon entering the facilities and have been found to lack adequate health care while incarcerated.

Photo credit: Benjamin Smith, Washington, DC

U.S. adolescents are more likely to be victims of violent crimes than individuals from other age groups.

It is important to note that adolescents (especially black and male adolescents) in this country are more likely to be victims of violent crimes than individuals from other age groups (see figure 9). Violence by adolescents and by individuals from other age groups is a major cause of injury and death among young people (307).

- Homelessness—Some adolescents are homeless, either with their families or on their own. In 1984, DHHS estimated (on the basis of 1976 data) that there are as many as 1 million homeless and runaway adolescents each year (256). Homeless and runaway adolescents are

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[23] *Delinquent acts* are acts that are committed by minors that would be considered crimes if committed by an adult or are offenses only because they are committed by minors (e.g., truancy, running away from home).

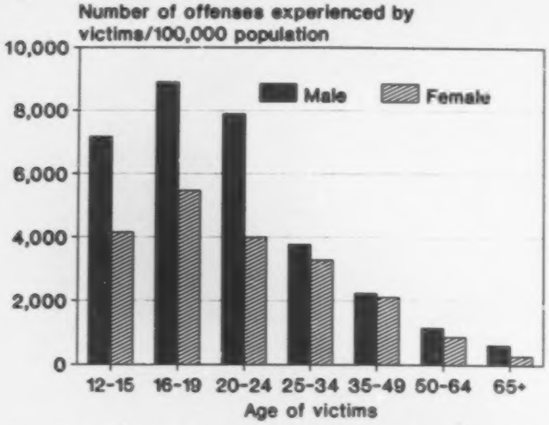
[24] *Minor offenses* are Federal Bureau of Investigation Part II offenses, which include acts that would be crimes if committed by adults (e.g., drug abuse violations, weapons violations, assaults without weapons, disorderly conduct, and driving under the influence) and status offenses (299).

[25] *Status offenses* are offenses that are considered offenses only because they are committed by a person under the age of majority (e.g., running away from home, truancy).

[26] *Serious offenses* are Federal Bureau of Investigation Part I offenses and include specified violent offenses (murder and nonnegligent manslaughter, forcible rape, robbery, and aggravated assault) and specified property offenses (burglary, larceny theft, motor vehicle theft, and arson).

[27] In 1989, the number of adolescents held in public facilities for serious violent offenses increased for the first time since 1983 (311).

Figure 9—Victimization Rates[a] for Rape, Robbery, and Assault by Age and Sex, 1988



[a]The *victimization rate* is the number of offenses experienced by a given population per some population base during a given time period.

SOURCE: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, *Criminal Victimization in the United States, 1988* (Washington, DC: forthcoming).

at increased risk for a wide variety of mental and physical health problems.

Further information on the prevalence of selected health problems and an indication of which adolescents are most at risk are summarized in appendix B, "Burden of Health Problems Among U.S. Adolescents," in Volume III of this Report.

Not all of the news is bad. One positive change is the decline since 1970 in accidental injury death rates among U.S. adolescents, for reasons that may include successful prevention efforts such as increased use of safety belts, safer car construction, and designated driver programs (158). Death rates for some other serious physical health problems (e.g., some types of cancer and major cardiovascular disease, as shown in figure 4) have decreased, largely as a consequence of medical advances. Also, water fluoridation efforts have dramatically reduced the prevalence of dental caries among the U.S. adolescent population in the last decade (112). Pregnancy rates for sexually active U.S. adolescents ages 15 to 19 declined between 1970 and 1985 suggesting that at least some sexually active adolescents are making effective use of contraceptives.[28] The percentage of U.S. adolescents living at home and in school who report using illicit drugs has recently decreased (252,263). Arrest rates for serious violent and serious property offenses in the aggregate among individuals under age 18 have been declining since the mid-1970s.

Nonetheless, the prevalence of health problems among U.S. adolescents is disturbingly high, and many health problems have been shown to be costly in both human and economic terms. Available information concerning the cost of various adolescent health problems is limited, but some of the figures that have been cited are shown in box B.

Which Adolescents Experience the Worst Problems?

The burden of health problems is not borne equally by all U.S. adolescents, as shown in appendix B, "Burden of Health Problems Among U.S. Adolescents," in Volume III. Nationally aggregated data for all adolescents obscure important age, sex, race, and income-related differences in the extent of specific problems. Unfortunately, reliable population-based information about the health status of adolescents from specific age, racial, ethnic, socioeconomic, regional, and residential groups is generally not available.[29] Most available information on adolescents focuses on older adolescents rather than younger ones.

Age Differences in Selected Adolescent Health Problems

As a general matter, older adolescents (roughly ages 15 to 18) are more likely than younger adolescents (ages 10 to 14) to experience health problems. The implications when a young adolescent experiences a health problem such as drug use or pregnancy, however, may be much more serious than the implications when an older adolescent experiences such a problem.

- **Older adolescents (15- to 18-year-olds) are** more likely than younger adolescents (10- to 14-year-olds) to be reported to be limited in a

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[28] There appeared to be an increase between 1985 and 1987, however (see "Specific Findings and Policy Options," below). Problems in estimating adolescent pregnancies are discussed in ch. 10, "Pregnancy and Parenting: Prevention and Services," in Vol. II.

[29] Age, sex, race, and income differences do not in themselves explain why certain adolescents are at high risk of certain problems.

Photo credit: Jonathan Roberts

The implications when a young adolescent experiences a health problem may be much more serious than the implications when an older adolescent experiences the same problem.

major activity[30] due to any chronic[31] condition (5.3 percent v. 4.4 percent), to have a chronic orthopedic impairment (7.1 percent v. 3.9 percent), to have chronic sinusitis (9.7 percent v. 8.3 percent), to have acne (9.3 percent v. 3.5 percent), and to have a disease of the female genital organs (1.3 percent v. prevalence so low as to be undetectable among younger adolescents by the National Health Interview Survey conducted by DHHS).

- **Younger adolescents** (10- to 14-year-olds) are more likely than older adolescents (15- to 18-year-olds) to be reported to have chronic asthma (6.2 percent v. 5.4 percent), heart murmurs (2 percent v. 1.3 percent), and speech impairments (1.1 percent v. prevalence so low as to be undetectable in the National Health Interview Survey) (291).[32]

Gender Differences in Selected Adolescent Health Problems

- **Female** adolescents are reported to experience more days of restricted activity[33] due to acute conditions[34] than adolescent males (770.7 days per 100 15- to 18-year-old adolescent females; 664.7 days per 100 10- to 14-year-old females; 629.2 days per 100 10- to 14-year-old adolescent males; and 580.6 days per 100 15-to 18-year-old adolescent males). These differences are due in part to pregnancy-related conditions, but there are also more reported days of restricted activity among females due to respiratory conditions (291).
- **Male** adolescents are reported to experience more days of restricted activity due to acute injuries than females (133.5 days per 100 adolescent males v. 104.9 days per 100 adolescent females), and are more likely to be reported to be limited in carrying on a major activity due to a chronic condition (5.4 percent of males v. 4.3 percent of females)[35] (291).

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[30] Includes physical conditions and mental (including emotional and behavioral) disorders.

[31] For purposes of the National Health Interview Survey, a condition is considered "chronic" if: 1) the respondent indicates it was first noticed more than 3 months before the reference date of the interview and it exists at the time of the interview, or 2) it is a type of condition that ordinarily has a duration of more than 3 months. Examples of conditions that are considered chronic regardless of their time of onset are diabetes, heart conditions, emphysema, and arthritis (286).

[32] Differences were not tested for statistical significance.

[33] In general, the National Center for Health Statistics defines a "restricted activity day" as one of the following four types of days in which a person's activity is restricted: 1) a *bed day*, during which a person stayed in bed more than half a day because of illness or injury or was in a hospital as an inpatient; 2) a *work-loss day*, during which a currently employed person 18 years of age and over missed more than half a day from a job or business; 3) a *school-loss day*, during which a student 5- to 17-years-old missed more than half a day from the school in which he or she was currently enrolled; and 4) a *cut-down day*, during which a person cuts down for more than half a day on the things he or she usually does. Work-loss, school-loss, and cut-down days refer to the short-term effects of illness or injury. Bed days are a measure of both long-or short-term disability, however, because a chronically ill bedridden person and a person with a cold could both report having spent more than half a day in bed due to an illness. It may be important to note that national surveys often rely on proxy respondents (e.g., parents, guardians) for individuals under age 17.

[34] For purposes of the National Health Interview Survey, a condition is considered "acute" if: 1) it was first noticed no longer than 3 months before the reference date of the interview, and 2) it is not one of the conditions considered chronic regardless of the time of onset. However, any acute condition not associated with either at least one doctor visit or at least 1 day of restricted activity is considered to be of minor consequence and is excluded from the final data produced by the survey (286).

[35] Reasons for not being able to carry on a major activity were not distinguished between physical conditions and mental (including emotional and behavioral) disorders.

Box B—Economic Costs of Selected Adolescent Health Problems

Available information on the economic costs of adolescent health problems in the United States is presented below. The information is incomplete but clearly demonstrates that the societal costs of adolescents' health problems are not insignificant. A deeper understanding of the full cost impact of adolescent health problems on the health care system and on society as a whole is impeded by data limitations.

The cost estimates presented below are expressed solely in monetary terms. Some costs (e.g., years of healthy life lost) are difficult to measure in terms of dollars. Alternative strategies that might be considered by policymakers were discussed in a 1980 OTA report on cost-effectiveness analysis (219).

Estimated Costs of Selected Adolescent Health Problems

Health problem	*Estimated cost and source*	*Important notes*
• Injuries	$39.4 billion in lifetime costs associated with injuries sustained in 1985 by 12.5 million adolescents and young adults ages 15 to 24[1]	Applies to individuals ages 15 to 24. Data not available for adolescents ages 10 to 18.
• Severe and chronic mental, emotional, and physical disabilities[2]	$3.9 billion in health care costs (1986 dollars)[3]	Applies to *all* individuals under age 21, not just to adolescents ages 10 to 18.
• Families begun when parents were adolescents	$16.65 billion in public costs for Aid to Families With Dependent Children (AFDC), Medicaid, and food stamps (1985 costs)[4]	Note this is 1 year's estimated costs for *all* families begun when parents were adolescents, not just costs for adolescent-headed families in 1 year.
• Mental health problems	$3.5 billion in treatment costs for adolescents ages 10 to 18 in 1986[5]	These are direct costs for *treatment provided* only.[6]
• Delinquency	$2 billion or more a year on confinement in public and private juvenile facilities for perhaps 700,000 adolescents.[7]	These data also include juveniles under age 10, but these constitute a small fraction of the total.

Cost estimates for other problems experienced by adolescents, such as alcohol and substance abuse,[8] AIDS or STDs, are not readily available.

Caveats

Primarily because of the limitations of available data, the costs noted above are not comparable. The costs are inconsistent regarding the entity that incurs the cost (e.g., society, the entire health care system, a specialty health care service system, publicly funded programs) and regarding the time during which the problems occurred (e.g., injuries sustained in 1985) or the costs were incurred (mental health treatment during 1986). The costs of injury, for example, reflect lifetime costs, while the costs of mental health treatment include only estimates of resources expended directly for the treatment of adolescents' mental health problems. Also, various ages are represented in the cost figures, from adolescents and young adults ages 15 to 24 (cost of injuries) to all individuals under age 21 (cost of disabilities).

The populations experiencing these problems may overlap (e.g., the costs of injuries includes adolescents with disabilities) or be excluded (e.g., the institutionalized population is not included in the estimates on disabilities) from the costs presented.

The costs of treatment and prevention noted above may not represent a level appropriate for adolescents' needs (26). Further, the appropriateness of the services represented in these costs is not evaluated here.

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[1] According to Rice and MacKenzie, *lifetime costs* associated with injuries represent the monetary burden on society of injury-related illness and premature death (179). The $39.4 billion estimate shown here includes both *direct costs* (e.g., expenditures for hospital care, physician services, prescriptions, etc.) and *indirect costs* (e.g., long-term morbidity costs, such as reduced productivity, and costs associated with premature mortality, such as lost productivity) resulting from injuries sustained by individuals ages 15 to 24 in 1985 (129). Overall, adolescents and young

adults ages 15 to 24 accounted for 22 percent of the injuries and 25 percent of the total cost of injuries experienced by the total U.S. population in 1985. The estimate of lifetime costs was calculated by the authors using data from the National Health Interview Survey, the National Hospital Discharge Survey, the National Medical Care Utilization and Expenditure Survey, the National Mortality Detail File, the National Council on Compensation Insurance's Detailed Claim Information data base, and the National Nursing Home Survey. The authors did not differentiate between accidental injuries and intentional injuries (e.g., homicide or suicide).

[2] In 1986, the leading reported causes of disability among children and adolescents under age 21 (accounting for over half of reported disabilities in this group) were mental and nervous system disorders (7.3 per 1,000 children and adolescents under age 21); respiratory diseases (6.0 per 1,000), musculoskeletal and connective tissue diseases (4.3 per 1,000), and eye and ear diseases and disorders (3.7 per 1,000) (159).

[3] Newacheck and McManus arrived at this estimate using data on disabilities collected as part of the 1980 National Medical Care Utilization and Expenditure Survey, a household-based survey of the noninstitutionalized civilian population (159). Cost figures were adjusted by the authors up to 1986 levels using the medical care component of the Consumer Price Index. Because the survey's definition of disability included only those people with a long-term limitation in usual activity, the "disabled" population represented in the survey may include a more severely disabled subset of the population with chronic conditions. The data are also limited by the small sample size (so that few children with low prevalence chronic conditions are represented in the sample) and by the timing of the sample (in that the data were collected in 1980-81 when more children were hospitalized, usually a more expensive treatment site).

[4] Burt's estimate includes direct payments to service providers, as well as the administrative costs of these three programs, but no indirect costs (such as morbidity and mortality due to maternal mortality among adolescents under age 15, low birthweight babies, loss of productivity associated with school dropouts, etc.). Also, the estimate does not include other services more likely to be used by families begun by an adolescent birth than by other families, such as publicly supported social services, housing, special educational services, and child protective services and foster care. To calculate the costs to AFDC and to Medicaid, Burt used estimates for 1985 expenditures (including administrative expenditures) from the U.S. Budget, 1986. For estimates of food stamp expenditures, Burt used information from the Committee on Ways and Means, U.S. House of Representatives (27).

[5] Burns and Taube used data from the National Institute of Mental Health to calculate this estimate (see ch. 11, "Mental Health Problems: Prevention and Services," in Vol. II). Between 18 and 22 percent of U.S. adolescents have mental health problems requiring treatment; OTA estimates that perhaps 6 percent actually receive treatment.

[6] The total costs of adolescent mental health problems for society (including indirect costs, such as losses in productivity or the burden on public services) have not been quantified.

[7] Cost estimates of juveniles in facilities are calculated by the Department of Justice, Office of Juvenile Justice Delinquency Prevention (306).

[8] Although it is estimated that about 272,000 adolescents are treated over the course of a year for alcohol or substance abuse (267), there is no information on the type of treatment (e.g., residential v. outpatient) those adolescents receive or its duration which makes estimates of the total cost of these services for adolescents unreliable. (The costs of treatment are highly variable, with estimates ranging from $15,000 to $50,000 for medically intensive intermediate rehabilitation to $1,000 to $2,000 for low-intensity outpatient alcoholism programs to $150 to $300 for alcohol education programs [335].)

SOURCES: Office of Technology Assessment, 1991, compiled from data from the following sources: **Injuries:** D. Rice and MacKenzie & Associates, *Cost of Injury in the United States: A Report to Congress 1989* (San Francisco, CA: Institute for Health and Aging, University of California and the Injury Prevention Center, The Johns Hopkins University, 1989); W. Max, D.P. Rice, and E.J. MacKenzie, "The Lifetime Costs of Injury," *Inquiry* 27:332-343, Winter 1990. **Disabilities:** P. Newacheck and M. McManus, "Financing Health Care for Disabled Children," *Pediatrics* 81(3):385-394, March 1988. **Pregnancy:** M.R. Burt with F. Levy, "Estimates of Public Costs for Teenage Childbearing: A Review of Recent Studies and Estimates of 1985 Public Costs," in National Research Council, Commission on Behavioral and Social Sciences and Education, Committee on Child Development Research and Public Policy, Panel on Adolescent Pregnancy and Childbearing, *Volume II: Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing*, S.L. Hofferth and C.D. Hayes (eds.) (Washington, DC: National Academy Press, 1987). **Mental health:** B.J. Burns and C.A. Taube "Mental Health Services," contract paper prepared for the Office of Technology Assessment, U.S. Congress, Washington, DC, 1990. **Delinquency:** U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention, *Children in Custody, 1987*, prepared by B. Allen-Hagen (Washington, DC, 1988).

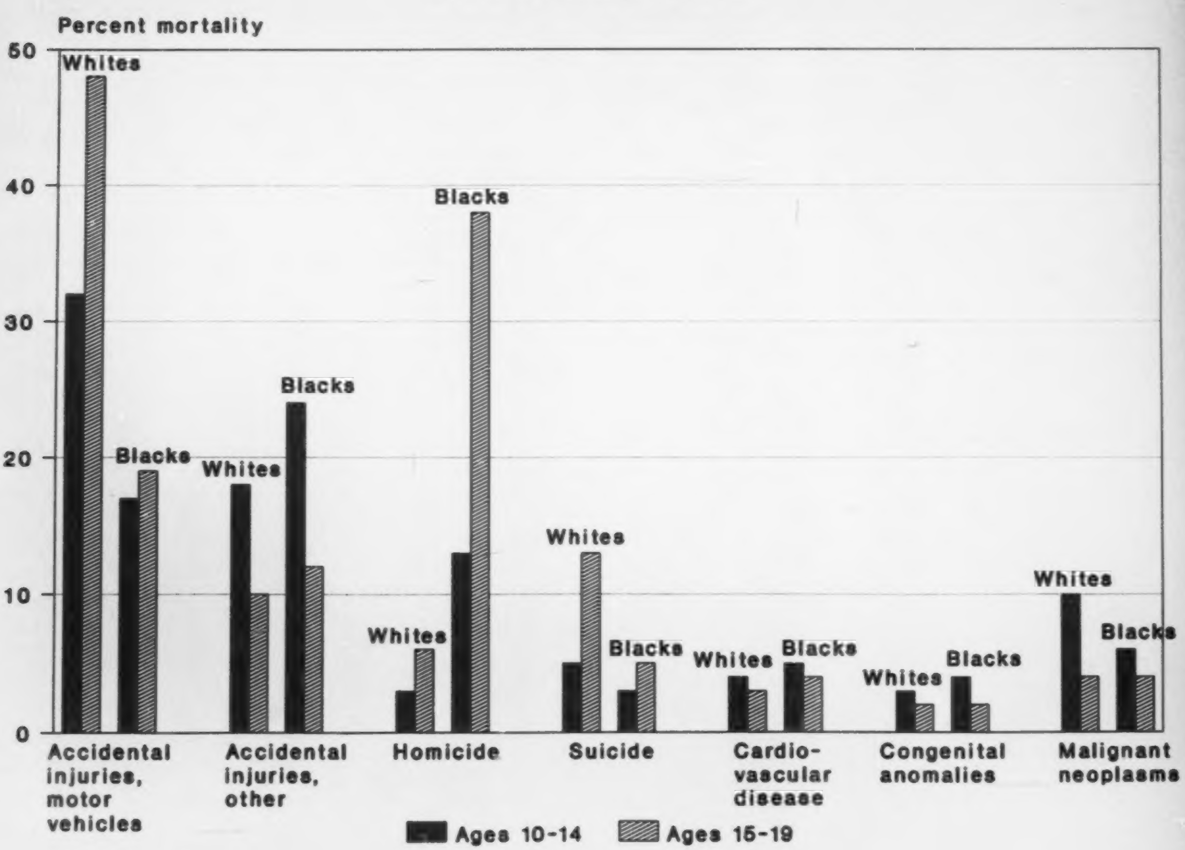
Female adolescents are obviously the only adolescents at risk of pregnancy. In addition, they are more likely than males to be the victims of rape or sexual abuse. They are also more likely to report subjective distress and to make suicide attempts than males. Male adolescents (especially older ones) are more likely than females to die as a result of accidental injuries, homicide, or suicide. Males are also more likely to be victims of robbery or assault (307).

Racial, Ethnic, and Socioeconomic Status Differences in Selected Adolescent Health Problems

There appear to be a number of racial and ethnic differences in health and related outcomes.

- White and black adolescents are about equal in being reported to be limited in a major activity due to a chronic condition (4.9 percent of white

Figure 10—Percent Mortality Due to Seven Leading Causes of Death for Black and White U.S. Adolescents Ages 10 to 14 and 15 to 19, 1987



SOURCE: Office of Technology Assessment, 1991, based on National Center for Education in Maternal and Child Health, Georgetown University, *The Health of America's Youth* (Washington, DC: September 1990).

adolescents and 5.1 percent of black adolescents), but white adolescents are more likely to be reported to incur school-loss days[36] as a result of an acute condition (399.9 days per 100 white adolescents v. 302.8 days per 100 black adolescents) (291).

- Black, Hispanic, and American Indian/Alaska Native adolescents drop out of high school at higher rates than other adolescents (34,74).
- Black male adolescents are in double jeopardy, being more likely than white males to die as a result of homicide (as shown in figure 10) and also more likely than white males to commit violent crimes and be arrested and incarcerated for delinquent offenses (74).
- White male adolescents are more likely than black males or other adolescents to die from motor vehicle and certain other accidents and suicide (see figure 10).
- Black and Hispanic females have high adolescent pregnancy and birth rates (61,74,320); however, pregnancy rates of white adolescents have been increasing faster than those of black adolescents (146). In 1988, 0.5 percent of black 10- to 14-year-olds and 10.6 percent of black 15- to 19-year-olds gave birth, compared with 0.06 and 4.4 percent of white adolescents in

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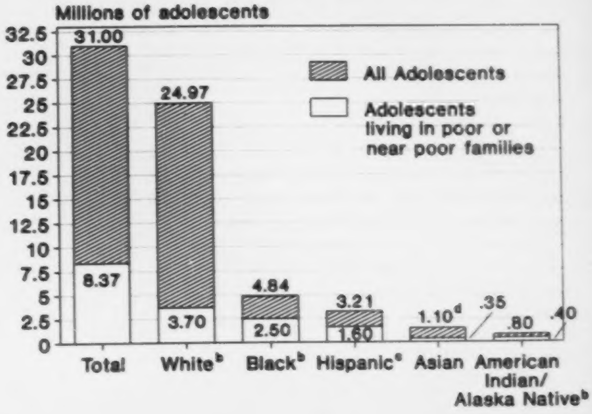
[36] A *school-loss* day is a day in which a student missed more than half a day from the school in which he or she was currently enrolled.

those age groups[37] (294). Comparable population-based data on births to adolescents for other racial and ethnic groups are not available separately because of shortcomings in pre-1990 Census data (294). Available data from 30 States and the District of Columbia suggest that one-sixth of the Hispanic-origin births (476,082 babies) in 1988 were to females under age 20, with wide variations in the incidence of adolescent childbearing among Hispanic groups (e.g., Mexicans, Puerto Ricans, Cubans, Central and South Americans); in 1988, there were 8,455 American Indian and Alaska Native babies, 1,181 Hawaiian babies, and 5,394 Asian babies born to females under age 20 (294).

- Black non-Hispanic adolescents account for 36 percent of all adolescent (13- to 19-year-old, by the Centers for Disease Control's definition) AIDS cases; Hispanic adolescents (all races) account for almost 20 percent of adolescent AIDS cases (280).
- Mexican-Americans have high rates of obesity, increasing their risk of eventually developing Type II (adult-onset) diabetes (133).
- American Indian adolescents are at high risk for a number of health problems, in particular, suicide, alcohol abuse, motor vehicle accidents, mental health problems, substance use, pregnancy, and periodontal problems.

What accounts for these racial and ethnic differences is not entirely clear. While some of the differences may be related to cultural factors, many of them are more likely to be attributable to differences in socioeconomic status. The proportion of U.S. adolescents living in poor or near-poor families varies considerably by race and ethnicity (see figure 11). Differences in health status by socioeconomic status are difficult to separate from those of racial and ethnic differences, because there is very little information collected that relates adolescents' socioeconomic status to their health. One indicator of health differences by socioeconomic status is that in 1988, adolescents whose family incomes were under $10,000 (7.8 percent) were more than *twice* as likely as those whose family incomes were $35,000 or above (3.5 percent) to have a limitation in a major activity as a result of a chronic condition (291). Other problems found more frequently among poor adolescents include poor physical health, depression, pregnancy, and criminal victimization. For further discussion of socioeconomic differences in adolescent health, see chapter 18, "Issues in the Delivery of Services to Selected Groups of Adolescents," in Volume III.

Figure 11—Number of U.S. Adolescents Ages 10 to 18 and Number Living in Poor or Near-Poor Families, by Race and Ethnicity, 1988[a]



[a] Poor and near-poor families are those with incomes at or below 150 percent of the Federal poverty level. Because 1988 population data are not available disaggregated by Hispanic and non-Hispanic, yet poverty statistics have been calculated for Hispanic and non-Hispanic, there is a slight overcount for the white and black adolescent populations.

[b] Includes both Hispanic and non-Hispanic.

[c] Persons of Hispanic origin may be of any race.

[d] The Census Bureau is unable to calculate the number of Asian and Pacific Islanders who are ages 10 through 18 for periods beyond 1980. OTA's rough estimate that there are approximately 1.100 million Asian and Pacific Islanders ages 10 to 18 is made by applying the estimated proportion of Asian and Pacific Islanders who were ages 10 to 18 in 1980 (15.9 percent, derived by taking 9/17ths of the proportion of the Asian and Pacific Islander population who were under 18 in 1980 (30.2 percent)) to the estimated total population of Asian and Pacific Islanders as of July 1, 1989. Better estimates of the 10- to 18-year-old Asian and Pacific Islander population of the United States will be available from 1990 Census statistics. Asian and Pacific Islanders include Filipinos, Chinese, Vietnamese, Koreans, Japanese, Asian-Indians, and "others."

SOURCE: Office of Technology Assessment, 1991, based on data from the following sources: **Adolescent population counts:** U.S. Department of Commerce, Bureau of the Census, *U.S. Population Estimates, by Age, Sex, Race, and Hispanic Origin: 1989* Current Population Reports, Series P-25, No. 1057, by F.W. Hollmann (Washington, DC: U.S. Government Printing Office, March 1990); S. Sue and N. Zane, "Health and Related Services for Asian American Adolescents," contract paper prepared for the Office of Technology Assessment, U.S. Congress, Washington, DC, November 1989; F. Hollmann, Demographer, Bureau of the Census, U.S. Department of Commerce, personal communication cited in F. Butterfield, "Asians Spread Across a Land, and Help Change It," *The New York Times*, Sunday, Feb. 24, 1991, p. 22. **Number of adolescents living in poor or near-poor families:** R. Kronick, Adjunct Professor, University of California, San Diego, CA, calculations based on U.S. Department of Commerce, Bureau of the Census, March 1989 Current Population Survey public use files, 1990.

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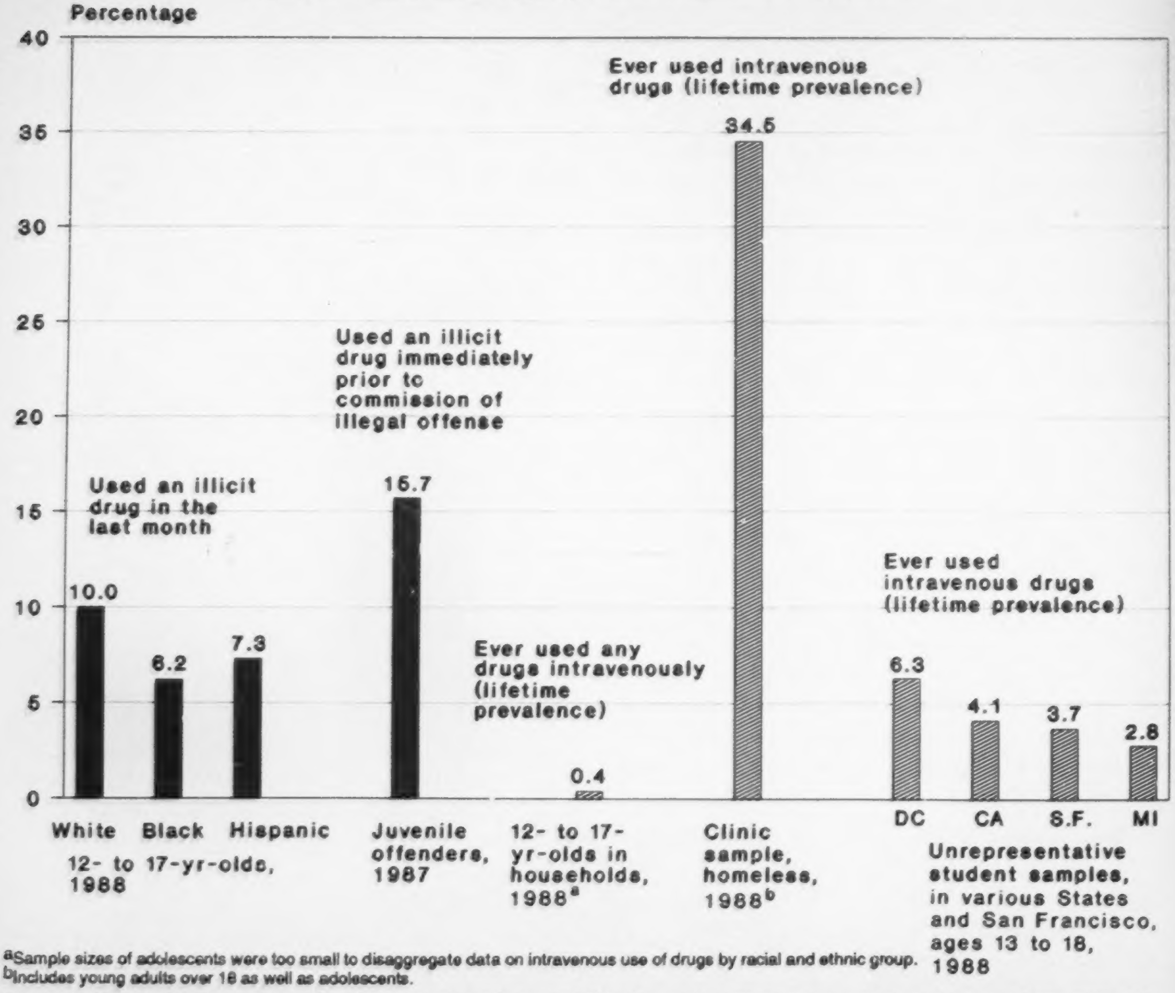
[37] These percentages are derived from rates of birth presented by race of the baby, and may not truly reflect the race of the mother (294).

Figure 12—Use of Illicit Drugs by Different Adolescent Populations



[a] Sample sizes of adolescents were too small to disaggregate data on intravenous use of drugs by racial and ethnic group.
[b] Includes young adults over 18 as well as adolescents.

SOURCE: Office of Technology Assessment, 1991, based on data from the following sources: **12- to 17-year-olds living in households, 1988:** U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse, *National Household Survey on Drug Abuse*, 1988 (Rockville, MD: 1989). **Incarcerated juvenile offenders, 1987:** U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, Report to the Nation of Crime and Justice, 2d ed., NCJ-105506M (Washington, DC: March 1988). **Homeless adolescents and young adults, 1988:** G. Yates, R. MacKenzie, J. Pennbridge, et al., "A Risk Profile Comparison of Runaway and Non-Runaway Youth," *American Journal of Public Health* 78:820-821, 1988. **Unrepresentative student samples, 1988:** U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, "HIV-Related Beliefs, Knowledge, and Behaviors Among High School Students," *Morbidity and Mortality Weekly Report* 37:717-721, Dec. 2, 1988.

Other Factors Associated With Differences in Adolescent Health Problems

In addition to cultural factors and socioeconomic factors, a number of other factors may affect adolescents' health (rural v. urban, neighborhood, lack of legal or financial access, and, of course, the occurrence of another health problem). As an example of how problems vary by populations, see figure 12, which illustrates differences in levels of illicit and intravenous drug use as reported by adolescents living in different locations and life circumstances (e.g., adolescents living in households, incarcerated juvenile offenders, homeless adolescents in a clinic, different States and cities).

One admittedly rough set of estimates by Dryfoos suggests that 10 percent of adolescents ages 10 to 17 have *multiple* serious *behaviorally based* problems (i.e., they have committed multiple serious offenses, used multiple drugs, and have been sexually active) (50,51). There is some evidence that these (and other) multiple-problem adolescents are at somewhat higher risk for other problem *behaviors* such as truancy and dangerous driving behaviors (49,59,99,165). On the basis of their involvement in minor offenses, marijuana and/or alcohol use, or sexual activity, Dryfoos estimated that another 40 percent of 11- to 17-year-olds (and 62 percent of 15- to 21-year-olds) were at *moderate* risk of multiple health problems (50). Other evidence such as that accumulated by OTA suggests that adolescents with multiple problems are at particular risk of lack of access to health services (e.g., in juvenile justice facilities, for drug abuse problems[38]). There is no one single source that has evaluated the prevalence of the *entire range* of possible health problems among adolescents (i.e., including emotional and physical, as well as behavioral, problems) or covariation among problems.[39]

What Causes Adolescent Health Problems?

In part because of uncertainty in the definition of adolescent health and health problems, and in part because of a lack of support for longitudinal and other intensive and innovative research strategies, it is difficult to pinpoint the factors leading to well-being or poor health. As the specific findings of this Report indicate, even the causes of many long-standing problems remain largely elusive.[40]

For example, why do some adolescents engage in potentially health-compromising "risky behaviors" such as riding in cars without using safety belts or with drunk drivers, having unprotected sexual intercourse, or using firearms in an unsafe way? What causes some adolescents to be violent? Why have so many adolescents attempted suicide? Why do so many feel depressed and hopeless? Why do so many drop out of school? Alternatively, why do some "resilient" adolescents appear to do well in the face of what seem to be seriously adverse family or other circumstances? Likewise, the causes of some physical problems are unclear (e.g., leukemia, acne, dsymenorrhea).

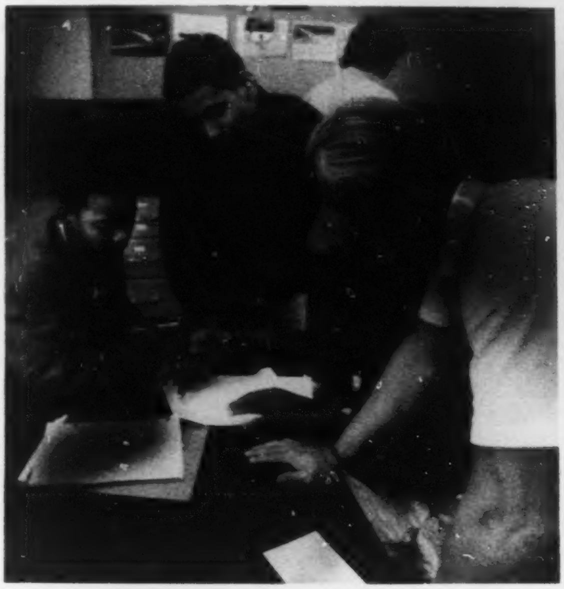


Photo credit: Education Week

Adolescents who do well seem to have strong and developmentally appropriate social support, preferably from their families, but if not from their families, from some other adult or adults.

Having the answers to both the problem-oriented and success-oriented questions is essential to the design of effective preventive and treatment strategies. Although systematic, problem-specific evidence is scarce, some general themes emerged throughout OTA's analysis, some from analyses of risk factors, and others from evaluations of change interventions. **Put positively, adolescents who do well seem to have strong and developmentally appropriate social support, preferably from their families, but if not from their families, from some other adult or adults. Similarly, schools that are small, comfortable, safe, and intellectually engaging and emotionally intimate communities can also make a difference in adolescent health and well-being. Interactions with healthy peers, guided by a caring and trained adult, have been shown to prevent additional delinquent behavior.**

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[38] See ch. 12, "Alcohol, Tobacco, and Drug Abuse: Prevention and Services," in Vol. II.

[39] *Covariation* is the tendency of health problems to occur in the same individual at about the same time. Most of the evidence on covariation of adolescent problems is based on cross-sectional studies, so it is still unclear for many problems whether one problem leads to another or the problems occur together, due to a single cause or set of causes (165). Another limitation of the evidence on covariation is that most of the evidence is limited to covariation in adolescent behaviors and does not consider emotional or physical problems.

[40] The limitations of the knowledge base on particular adolescent health problems are discussed in a section below entitled "Specific Findings and Policy Options."

Health care providers who are perceived as being attentive to adolescent concerns ensure greater compliance with treatment regimens. Evidence about the potential positive impact of these kinds of interactions suggests guidelines for changes in adolescent environments, including the design of services in a wide variety of areas.[41]

What Should Be Done To Prevent and Treat Adolescent Health Problems?

Interventions currently in place for adolescents have been characterized as either prevention or treatment. In general, *prevention services* are intended to prevent the occurrence of a problem (e.g., disease or condition). Conventional epidemiologic definitions of prevention differentiate preventive efforts as: 1) primary prevention (aimed at reducing the incidence of a disease or other health problem), 2) secondary prevention (aimed at reducing the prevalence of a problem by shortening duration among those who already have the problem), and 3) tertiary prevention (aimed at reducing complications) (114). With some exceptions, OTA's analysis of prevention services focuses most often on primary and secondary prevention intervention efforts delivered to adolescents during their adolescence. *Treatment services* are intended to cure or ameliorate the effects of a problem (e.g., disease or condition) once the problem has occurred.[42]

Although the distinction between prevention and treatment services is used throughout this Report, it is important to point out that in the case of adolescents in particular, the line between prevention and treatment is not always clear. Adolescents may have health concerns (e.g., problems in school, need for family planning counseling or contraceptive services, subjective distress) that would not be considered full-blown clinical problems (e.g., a learning disability, a conduct disorder, a pregnancy, clinical depression) by the mainstream health services treatment system but that could benefit from early clinical intervention. Perhaps more important, interventions for these subclinical issues are not typically financed by health insurers or public clinics.[43]

Further, an appropriate concern regarding adolescent health services is the extent to which they address the promotion of either specific aspects of or overall adolescent health as opposed to being focused on specific problems (39,137).

In no case—health promotion, problem prevention, treatment—does the evidence give comfort that adolescent health problems are in general being appropriately addressed by current health policies and service delivery systems. There are numerous examples of promising health promotion, problem prevention, and treatment interventions, but they have been implemented only sporadically. These promising interventions can provide considerable guidance for program implementation and the continuing design of more effective approaches.

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[41] They cannot, of course, be used to prevent such problems as leukemia, asthma, and acne, but they can serve as a guide to interpersonally appropriate treatment of adolescents with such problems.

[42] Prevention efforts can also be differentiated in various other ways. One way is in terms of prevention strategy: empowerment, health promotion, health protection, and preventive education (all forms of primary prevention) and screening and early clinical services (often considered forms of secondary prevention). Still other ways of differentiating prevention efforts are by intervention target (e.g., parents, teachers, individual adolescents, peers, entire communities, or all of the above) and, especially for primary prevention, by the age at which the intervention takes place (e.g., infancy, early or middle childhood, adolescence).

[43] An example encountered by an OTA staff member illustrates the problem. Jason was an 18-year-old from a very disadvantaged family and neighborhood who said he wanted to graduate from high school and join a branch of the military service so that he could travel and get a college education or learn a trade. His mother was a long-time alcoholic who had had her first child at age 15, and had her first five children taken away by various child protective services. Jason himself had been placed temporarily in foster homes a number of times, but was still living with his mother as he neared age 18. Jason, his mother, and his teenaged sister lived in a one-bedroom apartment in a neighborhood riddled by drugs and violence. Conflict between Jason and his mother grew, and he went to live with a family who had befriended him over the years. It quickly became apparent to the family that if Jason was to complete his senior year in school and have any hope of a normal, productive life, he would need intensive counseling as well as an evaluation for a possible learning disability. Jason fought with his peers in school, talked back to teachers, and had trouble concentrating. He had never read an entire book; most nights he did not bring home any schoolwork, claiming he had none. When the school finally found his records, it turned out he still had to take 2 years of English if he was to graduate; the school had him recorded as a sophomore, despite the fact that he was 18 years old.

Unfortunately, Jason had no health insurance other than Medicaid. Efforts to get him assistance through the local department of mental health were met with claims, probably true, that, compared to other young males in his city, Jason was doing well. He did not seem to be using or selling drugs, and he was not under arrest. So no publicly funded counseling was available; and neither Jason's mother nor his ''adoptive'' family could afford private counseling. Similarly, Jason had apparently never received assistance through Education for All Handicapped Children Act programs because no one had ever identified him as having a learning or mental health problem. Jason was referred solely to an Alateen program (group discussion sessions for children of alcoholics). He became disenchanted with the group because it consisted primarily of much younger children and, for this and other reasons, he soon dropped out.

Prevention of Adolescent Health Problems

A great number of efforts to prevent specific adolescent health problems or (less commonly) promote adolescent well-being have been designed and implemented. Conclusions about their effectiveness are often difficult to draw, in large part because few prevention interventions have been rigorously evaluated. The performance of methodologically sound evaluations appears to have been impeded by a number of factors, primarily a lack of funding and sensitivities concerning the discussion of some subjects (e.g., sexual behavior, suicide) with adolescents. In addition, there are some important problems for which there has been little concerted attention to prevention (e.g., violence). Further, many preventive efforts consist of standardized curricula, designed to be delivered by classroom teachers, or other relatively passive measures such as films, videos, brochures, and posters. While these may provide important health-related information to adolescents, it is unrealistic to expect these measures alone to either engender much behavior change or address the nonbehavioral aspects of adolescent health concerns (e.g., subjective distress, physical pain, family problems, school problems). Finally, there has been relatively little specific attention to efforts to promote well-being. For example, few adolescents—especially those living in poor communities—appear to have adequate access to recreational and other opportunities to make developmentally appropriate and healthful uses of their discretionary time (37,61a,62,204,206,255).

There is a growing consensus (in some cases accompanied by evidence from evaluations) about the following:

- Preventive efforts that change environments (e.g., safety belts and airbags that provide automatic protection in auto accidents), provide some form of concrete aid (e.g., contraception), or improve competencies (e.g., life-skills training) are more effective primary prevention strategies than are strictly didactic, education-based interventions.
- Preventive efforts that use comprehensive approaches involving multiple systems and addressing multiple issues may be more effective than traditional single-issue, single-focus approaches.
- In many cases (e.g., suicide, drug abuse), early intervention with appropriate clinical services—sometimes, but not always (189), termed secondary prevention—may be both more feasible and more effective than primary prevention. These too can be considered preventive interventions.

Education about the nature of health, health problems, and health-related interventions is, of course, important. Promising *educationally based* preventive interventions appear to be those that are both appropriate to the developmental and experiential level of the individual and participatory (i.e., encouraging guided discussion among adolescent participants) rather than didactic. In addition, to be consistent with findings from research on behavioral change, it is important for health education efforts to include explicit information about how adolescents can secure health and related services. Various groups' recommendations concerning health education for adolescents are summarized in box C. Not surprisingly, the promising elements of prevention interventions are consistent with findings about the elements of positive family life during adolescence: that it provide a prolonged protective and supportive environment, in which power is gradually shared, with the ratio between parental control and children's autonomy slowly becoming weighted in the direction of autonomy. It is possible to reorient existing prevention efforts so that they reflect these important principles.

Treatment of Adolescent Health Problems

If adolescent health problems cannot be prevented, then treatment services to cure or ameliorate the adverse effects of problems should theoretically be accessible, appropriate, and effective. To be *accessible*, treatment services must be available, approachable, and affordable. To be *appropriate*, the services must be delivered in a manner appropriate to the developmental and experiential status of the individual to be served. To be *effective*, services must accomplish what they are intended to accomplish. Many U.S. adolescents in need of health and related treatment services are likely to face problems related to access and appropriateness. In addition, treatment approaches for some highly visible problems—and for comprehensive approaches to health care delivery—have not yet been demonstrated to be effective.

Accessibility of Treatment—Access to basic health and related services is a critical problem for adolescents and appears to be related to the occur-

Box C—Key Groups' Recommendations on Health Education for Adolescents

Recognizing that most contemporary health education efforts are neither appropriate nor effective, several different groups have generated suggestions for change. These include the Carnegie Council on Adolescent Development Task Force on Education of Young Adolescents (29), the Centers for Disease Control within the U.S. Department of Health and Human Services (153); and the National Commission on the Role of the School and the Community in Improving Adolescent Health (153).

The different groups' suggestions for change overlap a great deal, but each group emphasizes somewhat different elements of a model strategy for health education. Furthermore, although none of the groups appears to have made a concerted effort to select or reject specific topics in health education, each group does mention somewhat different topics.[1] It is important to note that all three groups' recommendations pertain to school-based health education. To OTA's knowledge, there have been no attempts to conceptualize comprehensive health education for adolescents who are not in school.[2]

The recommendations of the Carnegie Council on Adolescent Development Task Force on Education of Young Adolescents emphasize the following elements of a model strategy for health education:

- integrating health education into school environments that are health-promoting;
- integrating health education into the core instructional program as an element of the life sciences[3]; and
- training in the so-called life skills that help adolescents to resist interpersonal or media messages to engage in specific negative behaviors, increase self-control and self-esteem, reduce stress and anxiety, gain in the ability to express apprehension and disapproval, and become assertive (29).[4]

The Centers for Disease Control supports the concept of comprehensive school health, defined as follows:

1. a documented, planned, and sequential program of health education for students in grades kindergarten through 12;

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[1] The Carnegie Council Task Force specifically mentions growth and function of adolescent bodies during adolescence; the value of a healthful diet and exercise; the dangers of illicit drugs, alcohol, and tobacco; and the avoidance of other risk behaviors (29). The Centers for Disease Control supports education on "a range of categorical health problems and issues" and mentions as specific topics for health education human immunodeficiency virus (HIV) infection, drug abuse, drinking and driving, emotional health, and environmental pollution (153). The National Commission on the Role of School and Community in Improving Adolescent Health mentions disease and accident prevention, family life and sex education, drug and alcohol abuse, violence, mental health, and nutrition (153). Overall, however, the primary concern of the three groups seems to be the approach to health education rather than specific topics in health education.

[2] The Centers for Disease Control are charged with developing HIV-related education prevention for out-of-school youth.

[3] Carnegie Corporation of New York is funding Stanford University to adapt for the middle grades its interdisciplinary approach to the postsecondary teaching of human biology; thus, a model curriculum will be available for implementation and testing.

[4] Students can learn these essential life skills through systematic instruction and role-playing (29,83).

rence of many serious adolescent health problems. **Some adolescents are more likely to be without access to health care than others:**

- the one out of seven adolescents without access to health insurance (including the one out of three poor adolescents without access to Medicaid[44]);
- adolescents whose health insurance benefits do not cover the services they need (e.g., adolescents who do not yet manifest full-blown clinical mental health problems);
- adolescents who are not aware of the existence of services;
- adolescents whose only access is to urban public health clinics that appear unapproachable;
- adolescents in actual or potential conflict with their parents about the receipt of health services for which they must have parental consent;
- adolescents incarcerated in juvenile justice facilities;
- homeless adolescents, living in families or on their own;
- adolescents with multiple problems, who almost inevitably face gaps among service systems;

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[44] Poor adolescents' access to Medicaid was changed by the Omnibus Budget Reconciliation Act of 1990 (OBRA-90, Public Law 101-508), which required that beginning July 1, 1991, children born after Sept. 30, 1983, with family incomes up to 100 percent of the Federal poverty level, are to be phased in to the Medicaid program. This change will not, therefore, affect the current generation of adolescents.

2. a curriculum that addresses and integrates education about a range of categorical health problems and issues (e.g., human immunodeficiency virus (HIV) infection, drug abuse, drinking and driving, emotional health, environmental pollution) at developmentally appropriate ages;
3. activities to help young people develop the skills they will need to avoid: a) behaviors that result in unintentional and intentional injuries; b) drug and alcohol abuse; c) tobacco use; d) sexual behaviors that result in HIV infection, other sexually transmitted diseases, and unintended pregnancies; e) imprudent dietary patterns; and f) inadequate physical activity;
4. instruction provided for a prescribed amount of time at each grade level;
5. management and coordination in each school by an education professional trained to implement the program;
6. instruction from teachers who have been trained to teach the subject;
7. instructions of parents, health professionals, and other concerned community members; and
8. periodic evaluations, updating, and improvement (153).

The National Commission on the Role of the School and Community in Improving Adolescent Health, a joint project of the National Association of State Boards of Education and the American Medical Association, recommended that young people receive a "new kind of health education—a sophisticated, multifaceted program that goes light years beyond present lectures on 'personal hygiene' or the four food groups" and includes the following elements:

- provides honest, relevant information about disease and accident prevention, family life and sex education, drug and alcohol abuse, violence, mental health, and nutrition;
- teaches skills and strategies needed to make wise decisions, develop positive values, generate alternatives, deal with group pressure, work cooperatively, and avoid fights—skills that are better learned through role-playing and other small group participatory activities than through lectures;
- includes participation in physical activity programs that foster lifelong exercise habits; and
- begins before students are pressured to experiment with risky behaviors and continues throughout adolescence. It should begin in kindergarten and continue in a planned, sequential manner through grade 12 (153).

SOURCES: **Carnegie Council on Adolescent Development Task Force on Education of Young Adolescents:** Carnegie Corporation of New York, Carnegie Council on Adolescent Development, Task Force on Education of Young Adolescents, *Turning Points: Preparing American Youth for the 21st Century* (Washington, DC: June 1989); **Centers for Disease Control and National Commission on the Role of the School and the Community in Improving Adolescent Health:** National Commission on the Role of the School and the Community in Improving Adolescent Health, *Code Blue: Uniting for Healthier Youth* (Alexandria, VA: National Association of State Boards of Education, 1990).

- adolescents in rural areas;
- Black, Hispanic, American Indian, and Alaska Native adolescents, because half of them live in families with incomes below 150 percent of the Federal poverty level (approximately $13,000 for a family of three in 1989).

Some of the major problems affecting adolescents' access to health and related services are listed in table 1. Barriers to access include poverty, lack of insurance, lack of trained providers, limitations in coverage, lack of information about the availability of services, lack of parental availability to accompany adolescents, and requirements for parental consent or notification. Some adolescents are affected by more than one of these barriers. Adolescents in juvenile justice facilities are typically not eligible for Medicaid, because most juvenile justice facilities are public institutions under the Medicaid definition, and Medicaid is prohibited from paying for health care provided in publicly funded institutions. Many American Indian adolescents are urban (and thus do not have access to the reservation-based Indian Health Service's services) and poor (and thus most likely without private health insurance and perhaps without Medicaid). Homeless adolescents are particularly likely to be affected by financial and legal restrictions on access.

Appropriateness of Treatment—Even if adolescents do gain access to treatment services, the services may not be appropriate to their developmental and experiential levels. Despite a longstanding recognition by medical professionals that

Table 1—Major Problems That Affect U.S. Adolescents' Access to Health and Related Services

Problem	Estimated proportion and/or number of U.S. adolescents affected	Adolescents most at risk
Lack of financial access to services		
Lack of health insurance:		
• Living in poverty without Medicaid	About 30 percent of poor adolescents do not have Medicaid (approximately 2.76 million).	Poor adolescents in Southern and, to a lesser extent, Western States are less likely to be Medicaid-eligible than poor adolescents in other regions.
• No private health insurance	About 30 percent of all adolescents do not have private health insurance coverage, but some (15 percent) have Medicaid or other public (e.g., the Civilian Health and Medical Program of the Uniformed Services) coverage. In 1988, 2.926 million adolescents whose parent(s) worked were uninsured.[a]	Adolescents in Southern (65 percent have private coverage) and Western (54 percent have private coverage) States have less private health insurance coverage than adolescents in other regions.
Limitations in coverage:		
• Limitations in coverage provided by Medicaid	Unknown. An estimated 3.70 to 4.58 million adolescents had Medicaid coverage at some point in time during fiscal year 1988.[b] How many are affected by coverage limitations depends on the service needed, type of provider, setting, adolescent's State of residence, and whether service is sought under Medicaid's Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program.	A number of services are optional under Medicaid, and adolescents in States that do not provide the service could experience a barrier to access. Services that are optional for States to provide to Medicaid beneficiaries include case management; dental services; some diagnostic, screening, preventive, and rehabilitative services; prescription drugs; eyeglasses, prosthetic devices, dentures, and orthopedic shoes; physical, occupational, and speech, hearing, and language disorder therapies; services of psychologists, chiropractors, optometrists, and podiatrists; private duty nursing; clinic services; intermediate care facility services; home and skilled nursing facility care for children; inpatient psychiatric facility care for children under age 21; and other medical or remedial care recognized under State law. In 1989, however, Congress passed EPSDT reforms that significantly expand adolescents' and other children's access to Medicaid-covered services by requiring States to periodically screen Medicaid-eligible adolescents for any illnesses, abnormalities, or treatable conditions and refer them for definitive treatment. States also must cover treatment for conditions identified during an EPSDT screen.

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[a] In 1988, about 2.926 million *uninsured* U.S. adolescents had parents who worked sometime during the year; 2.645 million uninsured U.S. adolescents had parents who worked for an employer 26 weeks or more during the year.

[b] This estimate was developed for OTA by the Office of the Actuary within the Health Care Financing Administration (HCFA) of DHHS (253). HCFA estimates that the average period of duration of Medicaid coverage is 9 months. In contrast, data from the March 1989 Current Population Survey, a household-based survey of noninstitutionalized persons, found that 2.96 million adolescents had Medicaid coverage only in calendar year 1988 (109). An additional 740,000 (23 to 25 percent of the 2.96 million) had both Medicaid and private coverage in 1988, according to the Current Population Survey. (See ch. 16, "Financial Access to Health Services," in Vol. III.)

Table 1—Major Problems That Affect U.S. Adolescents' Access to Health and Related Services—Continued

Problem	Estimated proportion and/or number of U.S. adolescents affected	Adolescents most at risk
• Limitations in the coverage provided by a private health insurance plan	Unknown. Approximately 21.7 million adolescents (70 percent of adolescents) are covered by private health insurance. How many are affected by coverage limitations depends on the service needed, type of provider, the limitations in any particular insurance plan, and, to some extent, the adolescent's State of residence.	Adolescents in need of mental health care (especially those adolescents without a diagnosable mental disorder), substance abuse treatment services, prenatal care (see below), home health care, extended care facilities, preventive screening procedures, including contraceptive services, general dental care, vision services, immunizations and inoculations, routine physical exams, hearing, orthodontia, and abortion services.[c]
Lack of parental availability	About 60 percent (17.5 million) of adolescents ages 10 to 17 live in households where both parents (or their single parent) work full time.	
Lack of independent legal access to services	Unknown. How many are affected depends on combination of age, health problem, type of service sought, and State of residence.	Adolescents below the age of majority (age 18 in most States) and in actual or potential conflict with their parents about the need for particular health services.
Lack of information about the availability of health services	Unknown, but available estimates indicate that the proportion of adolescents affected is high (or that adolescents are in fact correct that services are not available). For example, the majority of adolescents in a national survey either were not sure or did not believe they could obtain confidential treatment for a sexually transmitted disease (STD) (when almost all States allow services for STDs to be provided confidentially) (10).	Unknown.
Lack of perceived approachability/ appropriateness	Unknown, but available estimates indicate the proportion of adolescents affected may be high. Adolescents disagree with health care providers about what the most important health problems are, about what should be discussed during health care visits, and fear that private office-based physicians may breach confidentiality.	
Lack of appropriate care for adolescents	Depending on the problem and the specialty, from 4[d] to 74[e] percent of health care providers surveyed in the 1980s perceive themselves insufficiently trained to treat specified adolescent health problems. Primary care physicians appear to have difficulty in identifying adolescents who have behavioral, emotional, and substance abuse problems.[f]	

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[c] For example, at least eight States and the Federal Employees Health Benefits Plan have mandated some restriction of private health insurance benefits for abortions. Four States require that covered abortions be provided but only on an optional basis and at extra cost.

[d] In one study of Midwestern physicians, 96 percent of obstetrician-gynecologists felt comfortable addressing adolescents' sexual concerns (compared to 54 percent of pediatricians and 50 percent of psychiatrists) (164).

[e] In one national mail survey of primary care physicians (pediatricians, internists, and family practitioners), 74 percent of internists reported training deficiencies in all 19 health problem areas listed in the study. In contrast, greater proportions of family practitioners and pediatricians perceived having received adequate training, although there were seven topic areas for which at least 50 percent of family practitioners felt insufficiently trained to handle, and similarly, eight topic areas for pediatricians. Six of the seven topic areas for family practitioners, and six of the eight topic areas for pediatricians, consisted of psychosocial, behavioral, and mental health concerns (21,22).

[f] The number of physicians trained specifically in adolescent medicine is not known, but is probably around 1,400 to 2,000, not all of whom are frontline health care providers; in addition, another 1,500 psychiatrists, 1,500 psychologists, and 370 obstetrician-gynecologists have expressed *specific* interest in adolescent health issues. Except for training of adolescent medicine specialists, criteria for training in adolescent health care are vague, although improving (1,53).

Continued on next page

Table 1—Major Problems That Affect U.S. Adolescents' Access to Health and Related Services—Continued

Problem	Estimated proportion and/or number of U.S. adolescents affected	Adolescents most at risk
Specific groups of adolescents or types of adolescent problems		
• Adolescents with private health insurance in need of prenatal care	One-third of privately insured adolescents are not covered for maternity-related services by their parents' employment-based health insurance plan. This problem affects about 3.6 million adolescent females.[g]	
• Adolescents in juvenile justice facilities	2 percent of adolescents (about 700,000).	
• Homeless adolescents	Unknown, but DHHS estimated in 1984 (on the basis of 1976 data) that there were 1 million homeless and runaway adolescents each year (256).	Homeless adolescents who are not emancipated, whose parents cannot be reached, or whose parents will not give permission for access.
• Adolescents with or at risk of multiple problems, who almost inevitably face gaps among service systems.	Unknown, because a complete assessment of the overlap of health problems (especially environmental, physical, and emotional, as opposed to behavioral) has not been conducted (50,51,165).[h] Nevertheless, documented clinical experience suggests that numerous adolescents who seek health services have more than one problem, and typically could receive services from more than one health care or related "system" (e.g., primary health care, mental health services, substance abuse services, child welfare, shelters for the homeless) (54,95,199).	Adolescents with one problem who are likely to have other health problems include: adolescents with problem use of substances (may have a mental health problem); adolescents adjudicated to be delinquent (likely to have multiple health problems); homeless adolescents (likely to have multiple health problems); adolescents failing or misbehaving in school (likely to become pregnant, delinquent, and/or drop out of school before graduation).
• Racial and ethnic minority adolescents	Likely to be poor, and thus likely to be without health insurance.	Black adolescents, Hispanic adolescents, American Indian and Alaska Native adolescents, Asian-American adolescents. But Hispanic adolescents are much more likely than others to be uninsured regardless of family income (109).
• Rural adolescents	More likely to be poor, and thus more likely to be without health insurance.[i] More likely to try to solve problems on their own rather than seek help.[j] More likely to have problems gaining physical access to health services because of lack of health and mental health care providers as well as transportation problems.	Adolescents living on farms less likely to have help available to them and more likely to try to solve problems on their own rather than seek help, even though they are more likely to be troubled.

[g] Approximately 21.7 million adolescents are covered by private health insurance. Approximately half of these (10.85 million) are estimated to be females (based on the male/female adolescent population distribution). 3.6 million represents one-third of 10.85 million adolescents.

[h] One admittedly rough estimate is that 1 in 10 adolescents ages 10 to 17 (3 million) is "in dire straits, delinquent, in trouble in school, and prone to other high-risk behaviors (e.g., unprotected sexual intercourse, substance abuse), and that another group of 4 million was "*extremely vulnerable to* the negative consequences of [*though not necessarily engaging in*] multiple high-risk behaviors such as school failure, substance abuse, and early unprotected intercourse. . ." (50). The 10 percent in the "direst straits" were initially judged to be so on the basis of having committed serious multiple offenses, been multiple drug users, and been sexually active (50). Those behaviors are also associated, to some degree, with the other problem behaviors mentioned by Dryfoos (e.g., trouble in school) (165).

[i] Like almost all other differences, rural-urban-suburban differences in health insurance disappear when differences in family income are taken into account (109).

[j] It is not known whether rural adolescents who did not seek help were extremely self-reliant, undesirous of help, or unable to go and get help (323).

SOURCE: Office of Technology Assessment, 1991.

special skills and knowledge are required to treat adolescents, there are few health care or youth services professionals who have been specially trained to treat adolescents. Approximately 1,400 primary care physicians are specialists in adolescent medicine and only 1,400 psychologists express a special interest in adolescents (less than one of each of these professionals for every 1,000 persons ages 10 to 18); and there are approximately 5,000 psychiatrists specially trained to treat both children and adolescents (8,60,194,228). There is an American Society for Adolescent Psychiatry (1,500 members), and a North American Society for Pediatric and Adolescent Gynecology (370 members) (142,191). Other health professionals do not have special interest sections or keep track of members especially interested in adolescent health care. Unfortunately, while the need for adolescent-specific training is almost universally recognized, there are few training programs, and the effectiveness of current training criteria has not been systematically evaluated.

The most promising recent innovation to address the health and related needs of adolescents is the school-linked health or youth services center. Several private foundations, States, and local governments have provided considerable resources to initiate comprehensive school-linked health and/or youth services centers in which adolescents are offered confidential services without cost to the adolescents. Parental consent is usually obtained on a blanket basis before the adolescent seeks services.[45] A concerted effort is made at such centers to select health professionals capable of meeting the health and interpersonal needs of adolescents.

A number of barriers—in particular, inadequate funding, lack of trained personnel, community and provider resistance, and lack of systematic data on effectiveness—may interfere with successful implementation of comprehensive school-linked health or youth services centers. There are, in fact, several respects in which many school-linked health centers can be improved upon, as is well recognized by those who have worked closely with the centers (e.g., 115). Currently, for example, many school-linked health centers are similar to the mainstream health care system in that they do not meet the needs of students on holidays, weekends, and after school. Some centers also are similar to mainstream health services in that they do not conduct the kinds of outreach that would attract more students (e.g., males (105)) or adapt services to the simultaneous needs of students and the centers' financial constraints (e.g., emphasize mental health promotion and group counseling for students in addition to individual counseling (2)). School-linked health centers are limited by the inadequate numbers of health care providers specially trained to work with adolescents (see above), in multicultural settings, and in an interdisciplinary fashion (15). Further, adolescents who have dropped out of school typically do not have access to school-linked health centers.

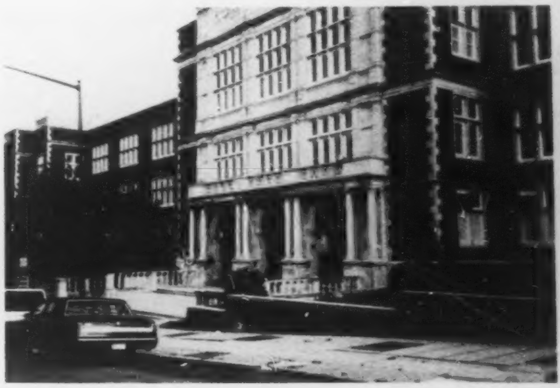

Photo credit: Office of Technology Assessment

The most promising recent innovation to address the health and related needs of adolescents is the comprehensive school-linked health or youth services center for adolescents.

These shortcomings are not insurmountable. Accumulating evidence, and increasing levels of support, suggest that the second generation of school-linked health and youth services centers may be able to go much further than either the mainstream health services system or the first generation of such centers in meeting the health (and, perhaps, related) needs of adolescents. Community-based health centers that provide confidential care appropriate to the needs of adolescents could help meet the needs of adolescents who cannot or do not choose to use school-linked services.

Effectiveness of Treatment—Although it was beyond the scope of this Report to conduct a full-scale evaluation of the effectiveness of treatment for every adolescent health problem, OTA found that treatment for some of the more highly visible problems—e.g., treatment for alcohol, tobacco, and drug abuse and treatment for problems associated with delinquency and homelessness—has not been adequately assessed for effectiveness. Some services (e.g., prenatal care for pregnant adolescents, mental health care) may be known to be efficacious under ideal conditions of use, but there is little information about their effectiveness under average or actual conditions of use.

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[45] See ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III. Consent forms often allow for parents to refuse permission for specific services to be performed.

What Is the Federal Government's Role in Improving Adolescent Health?

U.S. Executive Branch Agencies

U.S. executive branch agencies' activities related to adolescent health are numerous and varied:

- monitoring adolescents' health status and the provision of services to adolescents;
- supporting research;
- helping to build the capacity to provide services to adolescents;
- financing services;
- directly providing prevention and treatment services[46];
- protecting adolescent health through the regulation of environmental risks to health; and
- using the leverage of existing programs to implement change.

Many executive branch agencies—from the U.S. Department of Agriculture to the U.S. Department of Transportation—play an important role in addressing adolescent health and related issues. The major functions of some of these agencies are briefly summarized in table 2.

Taken together, Federal agencies and the Nation as a whole appear to spend considerable resources on issues related to adolescent health and well-being. It is difficult to define "considerable resources" and particularly difficult to determine whether Federal agencies are spending "enough" on adolescents or any other group. As a percent of specific Federal agency budgets, however, the amounts devoted specifically to adolescents are typically small. Estimated adolescent-specific expenditures by Federal agencies responding to a survey conducted by OTA in 1989 are shown in figure 13. Within DHHS, it is rare for an agency to devote more than 10 percent of its expenditures specifically to adolescents.[47] In some Federal agencies outside DHHS, adolescent issues may tend to receive a larger proportion of appropriated funds, although the total dollar amounts are small (see figure 13).[48]

The Federal Government is widely acknowledged to play an essential role in research and health monitoring, but relatively few research and health monitoring efforts focus on adolescents. The National Institute on Child Health and Human Development, the lead agency for basic research in adolescent health and development, estimated that it devoted 6.6 percent of its fiscal year 1988 expenditures to adolescent issues.[49] Little information about the health status of adolescents is collected by the Federal Government, and what is collected is difficult to obtain and use. For further discussion of these problems, see appendix C, "Issues Related to the Lack of Information About Adolescent Health and Health and Related Services."

Four other critical issues with respect to the Federal role in adolescent health may be as important as the proportion of funds that the Federal Government spends on adolescent health issues. One is that most of the health spending related to adolescents is on *entitlement* programs

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[46] Generally speaking, the Federal Government does not currently play a major role in directly providing prevention or treatment services (see, for example, C.D. Brindis and P.R. Lee, "Public Policy Issues Affecting the Health Care Delivery Systems of Adolescents" (25)). One exception is the provision of services to American Indians and Alaska Natives by the Indian Health Service (in DHHS) and the Bureau of Indian Affairs (in the U.S. Department of the Interior). However, the role of these agencies in adolescent health is small (228; see ch. 18, "Issues in the Delivery of Services to Selected Groups of Adolescents," in Vol. III).

[47] The Centers for Disease Control's Division of Adolescent and School Health, the National Institutes of Health's National Institute of Allergy and Infectious Diseases, and the Alcohol, Drug Abuse, and Mental Health Administration's National Institute of Mental Health are the exceptions (with 100 percent, 15 percent, and 12 percent, respectively, of expenditures estimated to be for adolescents).

[48] *Total* Federal outlays in 1988 were $1.1 trillion (318). Of this, $533 billion was for the "human resources" programs that account for the preponderance of the adolescent-health-related expenditures of the Federal Government (318). Figure 13 suggests that perhaps 2 percent of the $533 billion was spent on adolescent-specific issues.

[49] The National Institute on Child Health and Human Development devoted similar percentages from 1979 to 1988 (297). In late 1990, however, the agency began to design a separate adolescent program (3).

Table 2—Primary Functions of U.S. Executive Branch Agencies With a Role in Adolescent Health[a]

Agency	Primary function(s)
U.S. Department of Health and Human Services (DHHS)	Administers a wide range of programs related to health, welfare, and income security.
1. Family Support Administration (FSA)	Administers various programs intended to strengthen the American family.
A. Office of Family Assistance	Administers the Aid to Families With Dependent Children (AFDC) program and the Job Opportunities and Basic Skills Training (JOBS) program.
B. Office of Child Support Enforcement	Supports State efforts to enforce support obligations owed by absent parents to their children.
C. Office of Community Services	Administers the community services block grant and discretionary grant programs, which assist poor people.
2. Health Care Financing Administration (HCFA)	Administers the Medicaid[b] and Medicare programs.
3. Office of Human Development Services (OHDS)	Oversees various human services programs for the elderly, children and youth, families, Native Americans, persons living in rural areas, and people with disabilities.
A. Administration for Native Americans	Advises the Assistant Secretary for Human Development Services on matters related to American Indians and other Native Americans. Administers a grant program and provides technical assistance to Native American organizations to help them implement locally determined social and economic development strategies.
B. Administration on Development Disabilities	Administers the Development Disabilities Act and supports the development and coordination of programs for developmentally disabled persons of all ages.
C. Administration for Children, Youth, and Families	Funds comprehensive services for young children and their families through the Head Start program. Administers provisions of the Child Abuse Prevention and Treatment Act and manages a national clearinghouse on child abuse and neglect. Provides Federal support for child welfare services (including Federal funds for foster care maintenance). Administers the Runaway and Homeless Youth Act and a drug abuse prevention program for runaway and homeless youth.
4. Public Health Service	Supports a wide variety of efforts to improve the physical and mental health of Americans.
A. Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA)	Supports efforts to increase knowledge about and to prevent and treat alcohol and drug abuse and mental health disorders in the United States.
• National Institute on Alcohol Abuse and Alcoholism	Conducts and supports research on alcohol abuse and alcoholism.
• National Institute on Drug Abuse	Conducts and supports research on drug abuse.
• National Institute of Mental Health	Conducts and supports research on mental health and the prevention and treatment of mental illness.
• Office for Substance Abuse Prevention	Supports innovative prevention demonstration projects for individuals at high risk for drug or alcohol abuse; supports an information clearinghouse with drug and alcohol abuse prevention materials; provides technical assistance to States; supports training for substance abuse counselors.
• Office for Treatment Improvement	Supports efforts by States and communities to improve drug and alcohol abuse treatment programs; administers the alcohol, drug abuse, and mental health services block grant program.
B. Centers for Disease Control	Administers national programs for the prevention and control of communicable diseases; chronic diseases; and environmental health problems.
• Center for Chronic Disease Prevention and Health Promotion	Directs a national program aimed at the prevention of premature mortality, morbidity, and disability due to chronic illnesses.
—Division of Adolescent and School Health	Administers programs to reduce health risks to adolescents through comprehensive school health education and other means.
—Division of Reproductive Health	Administers programs and conducts research in areas related to contraception, pregnancy, human reproduction, and infancy.
• Center for Environmental Health and Injury Control	Directs a national program aimed at promoting a healthy environment and preventing premature death, avoidable illness, and disability caused by environmental and related factors.

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[a] The Federal agencies listed in this table are primarily agencies that responded to a survey conducted by OTA in August 1989 to determine the scope and level of adolescent-health-related activity at the Federal level. For further discussion, see ch. 19, "The Role of Federal Agencies in Adolescent Health," in Vol. III.

[b] Medicaid was established in 1965 under Title XIX of the Social Security Act to assist States in providing health care (e.g., inpatient and outpatient medical services, family planning services, prenatal care) to the poor.

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Table 2—Primary Functions of U.S. Executive Branch Agencies With a Role in Adolescent Health[a]—Continued

Agency	Primary function(s)
—Division of Injury Control	Administers and directs programs on the prevention and control of intentional and unintentional injuries.
—Division of Birth Defects and Developmental Disabilities	Administers programs directed toward determining the environmental causes of selected adverse reproductive outcomes and perinatal and childhood disabilities.
• Center for Infectious Diseases	Directs a national program aimed at improving the identification, investigation, diagnosis, prevention, and control of infectious diseases.
—Division of HIV/AIDS	Conducts studies, develops guidelines, evaluates programs and disseminates information on the prevention of human immmunodeficiency virus (HIV) infection and acquired immunodeficiency syndrome (AIDS).
• Center for Prevention Services	Directs national programs of assistance involving preventive health services to State and local health agencies.
—Division of STDs and HIV Prevention	Administers programs, in cooperation with other CDC components, for the prevention and control of sexually transmitted diseases (STDs), including HIV infection.
—National AIDS Information and Education Program	Disseminates information about HIV infection and AIDS to the public through various means (mass media, national information hotline, and clearinghouse).
• National Center for Health Statistics	Collects, analyzes, and disseminates health statistics on activities that relate to health status, needs, and resources.
C. Health Resources and Services Administration (HRSA)	Oversees a number of programs on general health services and resource issues relating to access, equity, quality, and cost of care; helps coordinate government and private efforts on behalf of rural health facilities.
• Bureau of Health Care Delivery and Assistance	Supports States and communities in their efforts to plan, organize, and deliver health care services to medically underserved populations, and to special services populations such as migrants and homeless people. Administers the National Health Service Corps Program.
• Bureau of Health Professions	Undertakes efforts to improve the education, distribution, and quality of health care professionals in the United States.
• Bureau of Maternal and Child Health[c]	Supports States and communities in their efforts to plan, organize, and deliver health care services to mothers and children. Awards maternal and child health block grants to States and discretionary grants for developing models of health care delivery to mothers and children, including adolescents.
D. Indian Health Service (IHS)	Provides health services for American Indians and Alaska Natives.
E. National Institutes of Health (NIH)	Conducts and supports biomedical research into the causes, prevention, and care of diseases.
• National Cancer Institute	Conducts and supports research on the causes, prevention, diagnosis, and treatment of cancer.
• National Eye Institute	Research on the eye and visual disorders.
• National Heart, Lung, and Blood Institute	Conducts and supports research on the causes, diagnosis, prevention, and treatment of heart, blood vessel, lung, and blood diseases. Conducts educational activities related to the prevention of these diseases.
• National Institute of Allergy and Infectious Diseases	Conducts and supports research on the causes, characteristics, prevention, control and treatment of a wide variety of diseases believed to be attributable to infectious agents, to allergies, or to other deficiencies or disorders in the responses of the body's immune mechanisms.
• National Institute of Arthritis and Musculoskeletal and Skin Diseases	Research on arthritis (including juvenile arthritis) and musculoskeletal and skin disorders (e.g., muscular dystrophies, acne).
• National Institute of Child Health and Human Development	Conducts and supports multidisciplinary behavioral and biomedical research on child health and maternal health, on problems of human development (e.g., mental retardation) and on family structure. Supports research on new contraceptives and AIDS.
• National Institute of Dental Research	Research aimed at eliminating tooth decay and an array of other oral-facial disorders.

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[c] In 1990, the Bureau of Maternal and Child Health and Resources Development split into two separate bureaus: 1) the Bureau of Maternal and Child Health, and 2) the Health Resources Development Bureau.

Table 2—Primary Functions of U.S. Executive Branch Agencies With a Role in Adolescent Health[a]—Continued

Agency	Primary function(s)
• National Institute of Diabetes and Digestive and Kidney Diseases	Conducts and supports research into the causes, prevention, diagnosis, and treatment of various metabolic and digestive diseases (e.g., juvenile diabetes, cystic fibrosis, sickle-cell anemia, hemophilia).
• National Institute of Environmental Health Sciences	Conducts and supports research to understand the effects of chemical, biological, and physical factors in the environment on health.
• National Institute of Neurological and Communicative Disorders and Stroke (NINCDS)[d]	Conducts and supports research on neurological disorders (e.g., head and spinal cord injury) and stroke.
• National Center for Nursing Research	Administers programs and research training programs aimed at promoting the quality of research in nursing and patient care, including care for adolescents.
F. Office of the Assistant Secretary of Health (OASH)	Aids the Secretary of Health with management responsibilities of the department.
• Office of Disease Prevention and Health Promotion	Supports and coordinates prevention programs within the Alcohol, Drug Abuse, and Mental Health Administration, the Centers for Disease Control, the Food and Drug Administration, the Health Resources and Services Administration, and the National Institutes of Health.
• Office of Minority Health	Ensures that DHHS funds are used to address minority health problems by organizing, and assessing current programs for minority health problems; provides technical assistance to States and local governments with respect to their efforts to address minority health issues.[e]
• Office of Population Affairs	Carries out Public Health Service Act Title X and Title XX programs related to adolescent pregnancy, family planning, and population research.
ACTION	Administers several Federal domestic volunteer service programs, including VISTA, the Foster Grandparents Program, and Student Community Service Projects.[f]
National Science Foundation (NSF)	Supports research in science and engineering through grants to universities and other research organizations.
U.S. Consumer Product Safety Commission	Collects information on consumer-product related injuries, promotes research on the causes and prevention of such injuries, develops voluntary or mandatory standards for consumer products, and sometimes bans hazardous products.
U.S. Department of Agriculture (USDA)	Administers a wide range of programs related to farms, nutrition, food, hunger, rural development, and the environment.
1. Office of the Assistant Secretary, Food and Consumer Services	
A. Food and Nutrition Service	Administers several programs to make food assistance available to needy people, including the Food Stamp Program, the School Breakfast Program, the Food Distribution Program, and the Special Supplemental Food Program for Women, Infants, and Children. Also gives grants to States for disseminating nutrition information to children.
B. Human Nutrition Information Service	Performs research in human nutrition; monitors food and nutrient consumption in the United States; and disseminates information on nutrition.
2. Office of the Assistant Secretary, Science and Education	
A. Extension Service	Serves as USDA's educational agency and is the Federal partner in the Cooperative Extension System, a nationwide educational network that provides access to food- and agriculture-related research, science and technology. Recent initiatives include programs on human nutrition, youth at risk, building human capital, and family and economic well-being.

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[d] In 1990, the National Institute of Neurological and Communicative Disorders and Stroke split into two separate institutes: 1) the National Institute of Neurological Disorders and Stroke, and 2) the National Institute on Deafness and Other Communication Disorders.

[e] These were its functions prior to the passage of Public Law 101-527, which established separate funding for an Office of Minority Health in DHHS.

[f] These were its functions prior to passage of the National and Community Service Act (Public Law 101-610).

Continued on next page

Table 2—Primary Functions of U.S. Executive Branch Agencies With a Role in Adolescent Health[a]—Continued

Agency	Primary function(s)
U.S. Department of Commerce	Administers a wide range of programs to promote the Nation's international trade, economic growth, and technical advancement.
1. Bureau of the Census	Collects, tabulates, and publishes or otherwise makes available a wide variety of statistical data on the U.S. population and the economy.
U.S. Department of Defense (DOD)	Oversees U.S. military forces and various civilian defense agencies.
1. Office of Civilian Health and Medical Program of the Uniformed Services (CHAMPUS)	Administers a civilian health and medical program for retirees and spouses and dependents of active duty, retired, and deceased members of the military.
U.S. Department of Education (DOE)	Establishes policy for, administers, and coordinates most Federal assistance for education.
1. Office of the Assistant Secretary for Elementary and Secondary Education	Formulates policies for, directs, and coordinates programs for elementary and secondary education. Administers grants to States and local school districts for Indian and migrant education, as well as grants to help schools meet the educational needs of educationally disadvantaged children (e.g., neglected or delinquent children under State care).
2. Office of the Assistant Secretary for Educational Research and Improvement	Administers functions concerning research, statistics, demonstrations, and assessment. Administers discretionary grants to improve health education for elementary and secondary students.
3. Office of the Assistant Secretary for Special Education and Rehabilitative Service	Administers programs in special education and provides services designed to meet the needs and develop the full potential of handicapped children.
4. Office of Bilingual Education and Minority Languages Affairs	Provides support for programs to meet the special educational needs of minority languages populations.
5. Office of the Assistant Secretary for Vocational and Adult Education	Administers programs of grants and assistance for vocational and technical education and coordinates rural education programs.
U.S. Department of the Interior	Has responsibility for the stewardship of nationally owned lands and natural resources; has trust responsibilities for American Indian reservations.
1. Bureau of Indian Affairs	Works with American Indian and Alaska Native people to develop and implement educational, social, and community development programs.
U.S. Department of Justice	Has broad responsibilities related to law enforcement, including oversight of the Federal Bureau of Investigation, the Drug Enforcement Administration, the Bureau of Prisons, the U.S. Marshals Service, the Immigration and Naturalization Service, and the Department's Civil Rights Division, Antitrust Division, Tax Division, Civil Division, Criminal Division, Environment and Natural Resources Division, etc.
1. Office of Justice Programs[g]	
A. Bureau of Justice Assistance	Provides financial and technical assistance to States and local governments to control drug abuse and violent crime and improve the criminal justice system.
B. Bureau of Justice Statistics	Collects, analyzes, and disseminates information about crime, and the operation of the criminal justice system at all levels of government.
C. National Institute of Justice	Works to improve the criminal justice system, address crime prevention and control, and enhance community safety and security.

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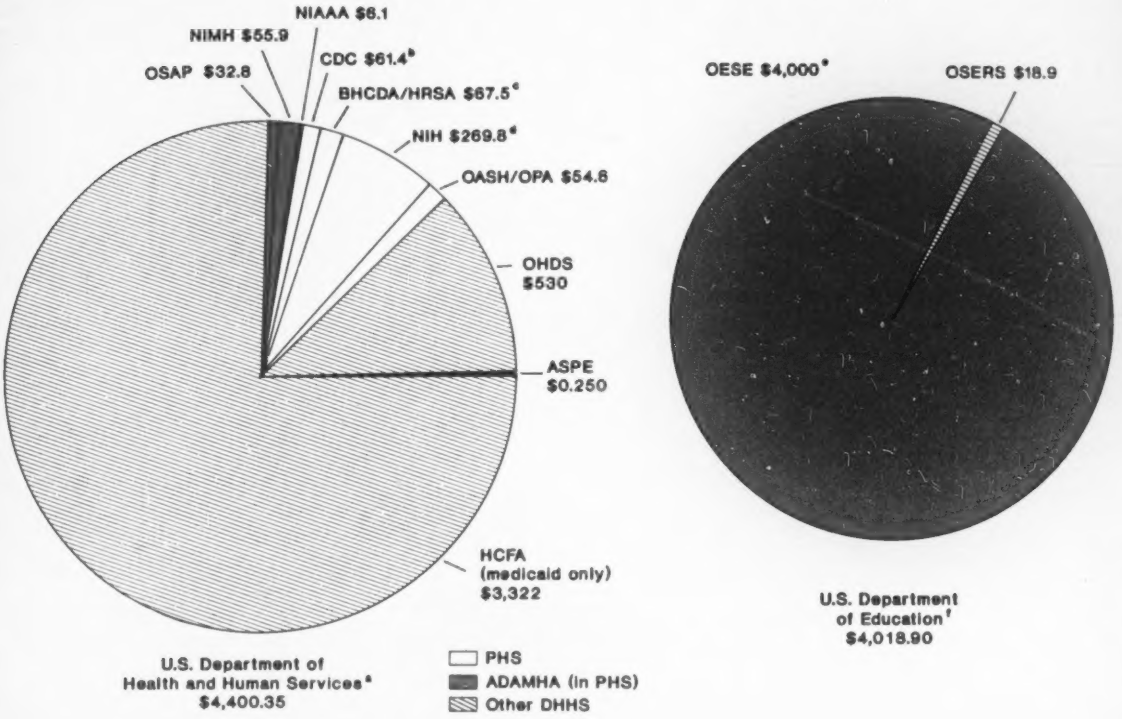
[g] The Office of Justice Programs was established by the Justice Assistance Act of 1984 and reauthorized in 1988 to help foster cooperation and coordination needed to make the criminal justice system function effectively.

Table 2—Primary Functions of U.S. Executive Branch Agencies With a Role in Adolescent Health[a]—Continued

Agency	Primary function(s)
D. Office of Juvenile Justice and Delinquency Prevention	Administers programs and policies intended to improve the juvenile justice system; assists communities in responding to the needs of juveniles; assesses the factors that contribute to juvenile delinquency; and informs practitioners about research findings and successful interventions.
E. Office for Victims of Crime	Carries out activities mandated by the Victims of Crime Act of 1984.
U.S. Department of Labor	Fosters U.S. workers' welfare, improves their working conditions, and promotes opportunities for employment.
1. Employment and Training Administration	Has responsibilities related to employment services, unemployment insurance, and job training. Administers the Job Training Partnership Act, which authorizes block grants to States for job training programs for economically disadvantaged individuals and provides authority for the Job Corps.
U.S. Department of Transportation	Develops coordinated national transportation policies and oversees a wide variety of transportation programs carried out by nine operating administrations (aviation, highway, railroad; highway traffic safety; urban mass transportation, etc.).
1. Federal Highway Administration	Administers the Federal-aid highway program of financial assistance to the States for highway construction and improvements, such as highway repairs and maintenance, which improve the safety of the roads; exercises jurisdiction over commercial motor carriers in interstate commerce.
2. National Highway Traffic Safety Administration	Carries out programs and research related to the safety and performance of motor vehicles, and related equipment.

SOURCE: U.S. Congress, Office of Technology Assessment, 1991, based on: National Archives and Records Administration, Office of the Federal Register, *The United States Government Manual 1990/91* (Washington DC: U.S. Government Printing Office, July 1, 1990).

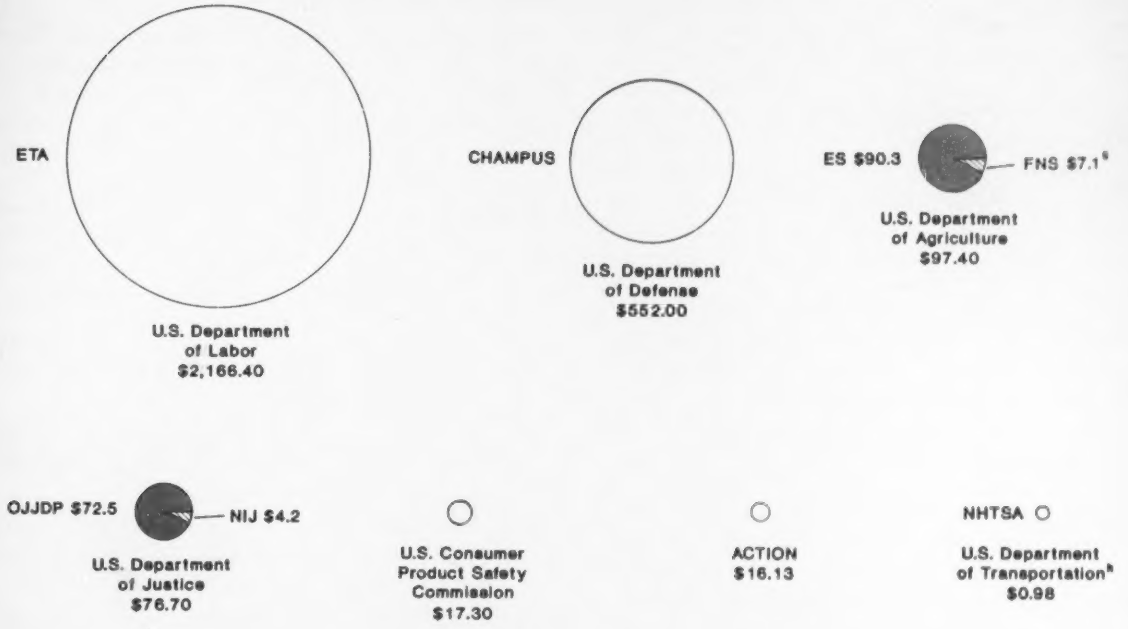
Figure 13—Estimated Adolescent-Specific Expenditures by U.S. Executive Branch Agencies Responding to OTA's 1989 Survey (dollars are in millions)



NOTE: Graphs are not drawn to scale. Differences in size are designed to provide rough estimates of differences in adolescent-specific expenditures only.

Key to abbrevations:
ADAMHA—Alcohol, Drug Abuse, and Mental Health Administration
ASPE—Assistant Secretary for Planning and Evaluation
BHCDA—Bureau of Health Care Delivery and Assistance
BMCH—Bureau of Maternal and Child Health
CCDPHP—Center for Chronic Disease Prevention and Health Promotion
CDC—Centers for Disease Control
CEHIC—Center for Environmental Health and Injury Control
CHAMPUS—Civilian Health and Medical Program of the Uniformed Services
CID—Center for Infectious Diseases
CPS—Center for Prevention Services
DI—Division of Immunization
DTC—Division of Tuberculosis Control
ES—Extension Service
ETA—Employment and Training Administration
FNS—Food and Nutrition Service
FSA—Family Support Administration
HCFA—Health Care Financing Administration
HRSA—Health Resources and Services Administration
IHS—Indian Health Service
NAIEP—National AIDS Information and Education Program
NIAAA—National Institute on Alcohol Abuse and Alcoholism
NIDA—National Institute on Drug Abuse
NIH—National Institutes of Health
NIJ—National Institute of Justice
NIMH—National Institute of Mental Health
NHTSA—National Highway Traffic and Safety Administration
OASH—Office of the Assistant Secretary for Health
ODPHP—Office of Disease Prevention and Health Promotion
OESE—Office of Elementary and Secondary Education
OHDS—Office of Human Development Services
OJJDP—Office of Juvenile Justice and Delinquency Prevention
OMH—Office of Minority Health
OPA—Office of Population Affairs
ORHP—Office of Rural Health Policy
OSAP—Office of Substance Abuse Prevention
OSERS—Office of Special Education and Rehabilitative Services
OSH—Office of Smoking and Health
OTI—Office of Treatment Improvement
PHS—Public Health Service
SSA—Social Security Administration

[a] The following agencies within DHHS were unable to provide OTA with the amount spent on adolescents alone: Family Support Administration, Social Security Administration, Indian Health Service, National Institute on Drug Abuse (ADAMHA, PHS), Office of Treatment Improvement (ADAMHA, PHS), National AIDS Information Education Program (CDC, PHS), Office of Safety and Health (CCDPHP, CDC, PHS), Division of Immunization (CPS, CDC, PHS), Division of Tuberculosis Control (CPS, CDC, PHS), Office of Rural Health Policy (HRSA, PHS), Bureau of Maternal and Child Health (HRSA, PHS), Bureau of Health Resources Development (HRSA, PHS), Office of Disease Prevention and Health Promotion (OASH, PHS), Office of Minority Health (OASH, PHS).



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[b] This figure includes $33.3 million spent by the Division of Adolescent and School Health (CCDPHP), $0.45 million spent by the Division of Reproductive Health (CCDPHP), $23.7 million spent by the Division of STD/HIV Prevention (CPS), $0.525 million spent by the Division of HIV/AIDS (CID), $3.3 million spent by Division of Injury Control (CEHIC), and $0.158 spent by the Division of Prevention Programs (CEHIC).

[c] This figure includes expenditures by the Bureau of Health Care Delivery and Assistance only. Expenditures on adolescents by other subagencies (e.g., the Bureau of Maternal and Child Health) within HRSA were not provided to OTA.

[d] This figure includes: $19.5 million spent by the National Cancer Institute, $0.148 million spent by the National Center for Nursing Research, $2.1 million spent by the National Center for Research Resources, $15.4 million spent by the National Heart, Lung, and Blood Institute, $98.2 million spent by the National Institute of Allergy and Infectious Diseases, $0.784 million spent by the National Institute of Arthritis and Musculoskeletal and Skin Diseases, $25.1 million spent by the National Institute of Child Health and Human Development, $26.6 million spent by the National Institute of Diabetes and Digestive and Kidney Diseases, $1.3 million spent by the National Institute of Neurological Disorders and Stroke. All are estimates.

[e] This is a very rough estimate by OTA. The Office of Elementary and Secondary Education dispenses most of the funds that are spent by the U.S. Department of Education. The Office has no specific line items for adolescents, because it distributes grants to schools and other organizations for various programs that are not aimed at a particular age group. In 1989, the Office of Elementary and Secondary Education disbursed $6.6 billion for all activities. OTA's estimate is based on the assumption that 10- to 18-year-olds are attending grades 5 through 12, which constitute 66.6 percent of elementary and secondary grades, not including kindergarten. Two-thirds of $6.6 billion is $4.4 billion. Since the percentage of adolescents attending school is likely to be lower than the percentage of younger children attending school, this estimate may be too high. OTA estimates, therefore, that the Office of Elementary and Secondary Education spends about $4 billion on education of adolescents. However, this estimate does not take into account that the cost of adolescents' education may be higher than that of younger students (e.g. more highly trained teachers, more sophisticated lab equipment).

[f] This figure does not include spending by the following offices within the U.S. Department of Education that also serve adolescents: Office of Bilingual Education and Minority Languages Affairs, Office of Planning, Budget, and Evaluation, Office of Postsecondary Education, Office of Vocational and Adult Education. These offices were not able to provide OTA with estimates of spending on adolescents.

[g] This is a very rough estimate by OTA. The figure was tabulated by using the following percentages on how many adolescents were served in the respective programs: 43 percent of the participants in the National School Lunch Program are in grades 7 through 12; 24 percent of the participants in the Supplemental Food Program for Women, Infants, and Children are pregnant, breastfeeding, or postpartum females under age 18; and 34 percent of participants in the Food Stamp Program are between the ages of 15 and 17.

[h] This figure does not include the Federal Highway Administration, which also serves adolescents.

SOURCE: Office of Technology Assessment, 1991, based on various responses to the Office of Technology Assessment's 1989 questionnaire regarding adolescent health initiatives, Washington, DC, 1989.

(e.g., Medicaid, Civilian Health and Medical Program of the Uniformed Services) rather than on *discretionary* programs (research, program development, some support for services).[50] For example, Federal spending for adolescents under Medicaid dwarfs spending in the National Institutes of Health, the Centers for Disease Control, the Alcohol, Drug Abuse, and Mental Health Administration, and other DHHS agencies combined (figure 13).[51] Second, even some of the discretionary spending is in the form of block grants to States.[52] Unless discretionary spending is increased, or moneys are reallocated from other population groups or health concerns, these approaches to funding for adolescent health potentially leave Congress and the U.S. executive branch relatively little flexibility in spending for adolescent health.[53] Third, much of the Federal non-block-granted discretionary spending on adolescent health issues is devoted to a limited range of specific topics and to a particular perspective on the causes of adolescent health problems.[54] The focus is overwhelmingly on nonenvironmental approaches to changing adolescents' behavior. Although no one would argue that there are certain behaviors in which adolescents should not engage, there is little emphasis in Federal programs on viewing problems from the perspective of adolescents, improving social environments[55] in order to potentially effect change in adolescent behavior, or improving adolescents' access to health services. The fourth issue is that, as this problem-specific approach suggests—and OTA's analysis of Federal policies confirms—the Federal Government does not have a coordinated approach to adolescent health. While there are numerous coordinating bodies and memorandums of interagency agreements within the U.S. executive branch, these coordinating efforts have not resulted in a synchronized approach to adolescent health that would prevent both excessive fragmentation and unwarranted duplication of effort.

Congressional Committees

The fragmented and problem-specific approach of U.S. executive branch agencies is understandable, at least in part, as a reaction to the multitude of congressional committees with a potential role in adolescent health. As intended by the U.S. Constitution, executive branch agencies take their direction from the legislation enacted by Congress. As shown in table 3, numerous congressional committees and subcommittees do or can potentially play a role in the many facets of improving adolescent health.

Two congressional committees and subcommittees play a major role in authorizing legislation related to adolescent health:

- the Senate Committee on Labor and Human Resources and its Subcommittee on Children, Family, Drugs, and Alcoholism; and
- the House Committee on Energy and Commerce and its Subcommittee on Health and the Environment.

Other congressional committees and subcommittees have important roles in various topic, special population, or service delivery areas (e.g., the Senate and House Committees on Agriculture authorize nutrition programs and rural development programs that have the potential to affect the lives of rural adolescents; the Senate Finance Committee is a major actor in Medicaid legislation). As in the U.S. executive branch, certain congressional committees

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[50] *Entitlements* are benefits paid out automatically each year to all who qualify unless there is a change in underlying law; these include Federal employee retirement benefits, Medicare, Medicaid, unemployment compensation, Aid to Families With Dependent Children, and supplemental security income (218). Congress can influence spending for entitlements by changing program eligibility and benefit rules; spending for entitlements is also affected by demographic and economic trends, and by the extent to which individuals seek services (e.g., under Medicaid). *Discretionary* programs are those subject to the annual appropriations process.

[51] It is also important to note that general and mental hospital costs accounted for about two-fifths of estimated Medicaid expenditures for 10- to 18-year-olds in 1988 (253).

[52] *Block grants* are sums of Federal funds allotted to State agencies (e.g., education, health) which may be passed onto local agencies. States determine the mix of services provided and the population served and are accountable to the Federal Government only to the extent that funds are spent in accordance with program requirements. Sometimes, however, set-asides are required for specific population groups.

[53] Barriers to change in current policies related to the current Federal deficit and recently legislated limitations on increases in domestic discretionary spending are discussed below (see "Barriers and Opportunities to Change").

[54] OTA's analysis of Federal efforts with respect to adolescents suggests that the adolescent health problems that currently receive the most Federal attention are problems related to adolescent sexuality, drug use, and, to some extent, delinquency (other than drug use) (see ch. 19, "The Role of Federal Agencies in Adolescent Health," in Vol. III).

[55] A *social environment* is the aggregate of social and cultural conditions that influence the life of an individual or community. Aspects of the social environment particularly important to adolescents include adolescents' families, other adults with whom adolescents come in contact, schools, workplaces, recreational facilities, and the media.

Table 3—Congressional Committees With a Role in Adolescent Health[a]

AP = Handles appropriations
B = Sets funding guidelines

AU = Authorizes major program areas
A = Authorizes specific programs

O = Oversight of programs
T = Jurisdiction over funding sources such as trust funds

Congressional committees and subcommittees[b]	Families	Schools and education	Work, recreation, and fitness	Nutrition	Special groups	Health and related services (delivery and access)	Financial access to health services	Future competitiveness and defense readiness	Other
Senate committees									
Agriculture, Nutrition, and Forestry[c] Nutrition and Investigations				AU/O	A/O				
Appropriations[d]	AP/O	AP/O	AP/O	AP/O	AP/O	AP/O	AP/O	AP/O	AP/O
Armed Services[e]						A/O	A/O	A/O	
Banking, Housing, and Urban Affairs[f] Housing and Urban Affairs	A/O				A/O				
Budget	O	O	O	O	O	O	O	O	O
Commerce, Science, and Transportation[g]			AU/O						AU/O
Environment and Public Works[h]			A/O					AU/O	
Finance[i] Social Security and Family Policy Health for Families and the Uninsured	T/O					T/O	AU/T/O		
Governmental Affairs[j]	O	O	O	O	O	O	O	O	AU/O

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[a] Except where noted, the congressional committees shown in this table are standing committees. *Standing committees* are committees that are permanent bodies of either the House or the Senate, have responsibility for broad areas of legislation (e.g., agriculture), and are responsible for most of the legislation considered by Congress. The Senate has 16 standing committees, and the House has 22 standing committees. *Select committees* are committees created to study particular problems or concerns (e.g., Select Committee on Children, Youth, and Families). These committees make recommendations but are usually not permitted to report legislation to Congress (the one exception is the Select Intelligence Committee). Joint committees are committees composed of members from both the House and the Senate. The Joint Economic Committee is the only joint committee which has a policy role v. an administrative role, and reports its findings to Congress.

[b] Only subcommittees that deal extensively with legislation related to adolescent health are noted. A *subcommittee* is an offshoot of a standing or joint committee and deals with a particular area covered by the full committee. There are usually a number of subcommittees within a particular committee. Members of the subcommittee are also members of the full committee. Subcommittees hold hearings and amend bills relating to their particular topic area. The amendments must be voted on in the full committee before returning to the House or Senate floor.

[c] The Senate Agriculture, Nutrition, and Forestry Committee authorizes and exercises oversight over numerous programs administered by the U.S. Department of Agriculture, including food and nutrition programs (e.g., the Food Stamp Program, school nutrition programs) and programs related to rural development.

[d] The following subcommittees of the Senate Appropriations Committee deal with programs relevant to adolescent health: Agriculture, Rural Development, and Related Agencies; Commerce, Justice, and State, the Judiciary, and Related Agencies; Defense; Interior and Related Agencies; Labor, Health and Human Services, Education and Related Agencies; and Transportation and Related Agencies.

[e] The Senate Armed Services Committee authorizes and exercises oversight over numerous programs administered by the U.S. Department of Defense, including the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), a civilian health and medical program for retirees and the spouses and dependent children of active duty, retired, and deceased military personnel.

[f] The Senate Banking, Housing, and Urban Affairs Committee authorizes and exercises oversight over programs administered by the U.S. Department of Housing and Urban Development, including public and private housing programs and community development block grants.

[g] The Senate Commerce, Science, and Transportation Committee authorizes and exercises oversight over programs administered by the U.S. Department of Transportation, including programs related to highway and motor vehicle transportation safety.

[h] The Senate Environment and Public Works Committee authorizes and exercises oversight over programs administered by the Environmental Protection Agency that alleviate or reduce noise, water, and air pollution.

[i] The Senate Finance Committee authorizes health programs under the Social Security Act, including Medicaid.

[j] The Senate Governmental Affairs Committee has jurisdiction over programs of the Census Bureau, and over the organization of Congress and the U.S. executive branch.

Continued on next page

Table 3—Congressional Committees With a Role in Adolescent Health[a]—Continued

AP = Handles appropriations
B = Sets funding guidelines
AU = Authorizes major program areas
A = Authorizes specific programs
O = Oversight of programs
T = Jurisdiction over funding sources such as trust funds

Congressional committees and subcommittees[b]	Families	Schools and education	Work, recreation, and fitness	Nutrition	Special groups	Health and related services (delivery and access)	Financial access to health services	Future competitiveness and defense readiness	Other
Judiciary[k]					AU/O				AU/O
Labor and Human Resources[l]	AU/O	AU/O	AU/O	AU/O	AU/O	AU/O	AU/O	AU/O	AU/O
Labor									
Education, Arts, and Humanities									
Employment and Productivity									
Disability Policy									
Children, Family, Drugs, Alcoholism									
Select Committee on Indian Affairs					O	O	O		
House committees									
Agriculture[m]				A/O	AU/O				
Conservation, Credit, and Rural Development									
Domestic Marketing, Consumer Relations, and Nutrition									
Appropriations[n]	AP/O	AP/O	AP/O	AP/O	AP/O	AP/O	AP/O	AP/O	AP/O
Armed Services[o]						A/O	A/O	A/O	
Banking, Finance, and Urban Affairs[p]	A/O				A/O				
Housing and Community Development									
Budget	O	O	O	O	O	O	O	O	O
Education and Labor[q]	AU/O	AU/O	AU/O	A/O	A/O				AU/O
Elementary, Secondary, and Vocational Education									
Health and Safety									
Employment Opportunities									
Select Education									

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[k] The Senate Judiciary Committee authorizes and exercises oversight over programs administered by the U.S. Department of Justice, including Office of Justice and other programs related to juvenile justice and delinquency prevention.

[l] The Senate Labor and Human Resources Committee authorizes and exercises oversight over a wide range of programs related to health, education, labor, and public welfare. It has jurisdiction over the Public Health Service Act, substance abuse programs, education programs, and numerous other programs related to children and families.

[m] The House Agriculture Committee authorizes and exercises oversight over programs administered by the U.S. Department of Agriculture, including food and nutrition programs (e.g., the Food Stamp Program, school nutrition programs) and programs related to rural development.

[n] The following subcommittees of the House Committee on Appropriations deal with programs relevant to adolescent health: Commerce, Justice, and State, the Judiciary, and Related Agencies; Defense; Interior and Related Agencies; Labor, Health and Human Services, Education, and Related Agencies; Rural Development, Agriculture, and Related Agencies; and VA, HUD, and Independent Agencies.

[o] The House Armed Services Committee authorizes programs administered by the U.S. Department of Defense, including CHAMPUS (see Senate Armed Services Committee above).

[p] The House Banking, Finance, and Urban Affairs Committee authorizes and exercises oversight over programs administered by the U.S. Department of Housing and Urban Development, including housing and community development programs.

[q] The House Education and Labor Committee authorizes and exercises oversight over a wide range of programs related to education, labor standards, human resources programs for the elimination of poverty and the care and treatment of children (e.g., Head Start, community services block grants, juvenile justice and delinquency prevention, and programs for runaway youths), and job training.

Table 3—Congressional Committees With a Role in Adolescent Health[a]—Continued

AP = Handles appropriations
B = Sets funding guidelines

AU = Authorizes major program areas
A = Authorizes specific programs

O = Oversight of programs
T = Jurisdiction over funding sources such as trust funds

Congressional committees and subcommittees[b]	Families	Schools and education	Work, recreation, and fitness	Nutrition	Special groups	Health and related services (delivery and access)	Financial access to health services	Future competitiveness and defense readiness	Other
Energy and Commerce[f] Health and the Environment	AU/O		AU/O	AU/O	AU/O	AU/O	A/O		A/O
Government Operations[s]	O	O	O	O	O	O	O	O	AU/O
Interior and Insular Affairs[t]	AU/O		AU/O		AU/O	AU/O	AU/O		
Judiciary[u]	AU/O				AU/O				AU/O
Post Office and Civil Service[v]	A/O				A/O	A/O	A/O		A/O
Science, Space, and Technology[w]		A/O						AU/O	AU/O
Ways and Means[x] Health Human Resources	AU/O			A/O		AU/O	AU/O		
Select Committee on Children, Youth, and Families	O	O	O	O	O	O	O	O	O
Select Committee on Hunger	O	O		O	O	O	O		
Select Committee on Narcotics Abuse and Control[y]	O	O	O			O	O		O
Joint committee									
Joint Economic Committee Economic Resources and Competitiveness Education and Health		O				O		O	O

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[f] The House Energy and Commerce Committee authorizes and exercises oversight over a wide range of programs related to health and the environment. It has jurisdiction over the Public Health Service Act and biomedical programs and health protection in general (including Medicaid and national health insurance). It also has jurisdiction over the Clean Air Act and the Safe Drinking Water Act.

[s] The House Government Operations Committee has oversight responsibilities related to the organization and reorganization of the U.S. executive branch.

[t] The House Interior and Insular Affairs Committee authorizes and exercises oversight over programs administered by the U.S. Department of the Interior, including programs that deal with national parks and several programs that affect Native Americans.

[u] This House Judiciary Committee authorizes and exercises oversight over programs administered by the U.S. Department of Justice, including Office of Justice and other programs related to juvenile justice and delinquency prevention.

[v] The House Post Office and Civil Service Committee has jurisdiction over programs of the Census Bureau and authorizes programs that deal with health and related services for Federal employees and their families.

[w] The House Science, Space, and Technology Committee authorizes research and development in science and technology.

[x] The House Ways and Means Committee authorizes and exercises oversight over numerous programs of the Social Security Act, including AFDC.

[y] The House Select Committee on Narcotics Abuse and Control investigates issues relating to substance abuse and the criminal justice system.

SOURCE: Office of Technology Assessment, based on material from U.S. Congress, Library of Congress, *Congressional Yellow Book* 16(3) (Washington, DC: Monitor Publishing Co., Fall 1990).

(e.g., the House Select Committee on Children, Youth, and Families) or groups (the Senate Children's Caucus) have responsibility for oversight (House Select Committee on Children, Youth, and Families) or information dissemination (Senate Children's Caucus), but have no authorization or appropriation jurisdiction. Thus, there is fragmentation in the U.S. Congress that it might be helpful to reduce.

Major Policy Options

OTA's analysis of U.S. adolescents' health needs suggest numerous opportunities for action at many levels: Federal, State, and local governments and agencies; the private for-profit and not-for-profit sectors; parents; and adolescents themselves. OTA's analysis also suggests that **a more sympathetic, supportive approach to adolescents by policymakers seems warranted.** The orientation to adolescents taken during any action is as important as whether an action is taken or its intensity. The new, more supportive approach that OTA's analysis suggests is warranted is discussed below.

Also discussed are three major policy options for Congress that OTA's analysis suggests would both demonstrate the Nation's commitment to a new approach to adolescent health issues and provide tangible, appreciable assistance to adolescents with health needs:

1. **taking steps to improve adolescents' access to appropriate health and related services;**
2. **taking steps to restructure and invigorate the Federal Government's efforts to improve adolescents' health; and**
3. **supporting efforts to improve adolescents' environments (see table 4).**[56]

Each of these major options involves numerous potential strategies, which are presented in detail below. The three major options and strategies cut across the areas analyzed in this Report. Some of them would benefit certain groups of adolescents, or address specific problems, more than others.

The complexity of adolescent health issues, the diversity of the U.S. adolescent population, the structure of the existing health and related services system generally,[57] and political and value considerations[58] all guarantee that there is no one simple approach to achieving any of the goals reflected in the major policy options. With each major option, therefore, OTA presents a range of potential strategies for accomplishing the goal. (See tables 5, 6, and 8 for summaries of the strategies associated with each major option.)

Table 4—Summary of Three Major Policy Options Related to U.S. Adolescents' Health[a]

Major Option 1:	Congress could take steps to improve adolescents' access to appropriate health and related services.
Major Option 2:	Congress could take steps to restructure and invigorate the Federal Government's efforts to improve adolescents' health.
Major Option 3:	Congress could support efforts to improve adolescents' environments.

[a]Possible strategies for implementing these options are presented in table 5 (Major Option 1), table 6 (Major Option 2), and table 8 (Major Option 3).

SOURCE: Office of Technology Assessment, 1991.

A New Approach

Currently, adolescent health is often viewed in a problem-specific manner, with the emphasis on a relatively few highly visible issues. Further, as is consistent with the current national approach to health problems, much of the burden for improvements in health is placed on the individual adolescent (201,260). If only adolescents would stop taking drugs, stop having sex, and stay in school, the argument goes, all would be right in adolescent health. **Parents, schools, health care systems, individual health care providers, youth services workers, and adolescents themselves are generally given little guidance, and few resources, to enable them to be supportive of adolescents.**

How do adolescents feel about adolescent health? Part of the problem in answering this question is that—despite the fact that they are held largely responsible for their health problems—there is little systematic evidence on the adolescent perspective on health issues. The evidence that is available suggests that adolescents believe that there is considerable social ambivalence when it comes to adolescent behavior such as sexuality, alcohol, tobacco, and drug use, and other risk-taking behaviors (e.g., dangerous driving practices) (235),[59] that many adults do not really care about them (209),[60] that health care providers do not discuss the issues of concern to them,[61] and that many adults seem only to see the negative when it comes to adolescents (88).

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[56] In addition to these major policy options, problem- or system-specific policy options are presented below in conjunction with findings from specific chapters in this Report (see "Specific Findings and Policy Options").

[57] See section below entitled "Barriers and Opportunities to Change."

[58] See below, "Barriers and Opportunities to Change."

These findings on adolescents' views, scarce as they are, suggest the existence of a wide gulf between adolescents and adults. Adult observers have also noted that public attitudes toward adolescents are, if not negative, then largely unsympathetic (15,190). As noted by a work group of the 1986 DHHS-sponsored conference "Health Futures of Youth," "most prominent among obstacles to the creation and continuation of integrated community health programs *for* youth is that the consumers of these services *are* youth" (15). An assessment of the reasons for such unsympathetic attitudes is beyond the scope of this Report,[62] but the attitudes can be characterized as consisting of notions that adolescence is merely a transitional stage, rather than a period of life to be valued in its own terms (93), and that adolescence is inherently a problem period about which little can be done (70).

Adolescence is undoubtedly a difficult period for many adults, especially parents (130). Both adolescents and adults may be unsure about how to deal with shifts in the balance of power that begin to occur during adolescence (130). The type of communication that adults have with adolescents, and either the restrictions they place on them or the detachment they assume, may be generated by caring, but may not be perceived as benevolent by adolescents.

OTA concludes, therefore, that, in addition to supporting concrete improvements in a broad range of health and related services and policies, Federal and other policymakers should follow a basic guiding principle of providing a prolonged protective and appropriately supportive environment for adolescents. Implementation of this basic guiding principle may be difficult, however, and attempts will undoubtedly generate disagreement among policymakers. One model that could be followed is that of authoritative parenting. Authoritative parenting consists of a combination of open communication and give-and-take between parent and adolescent, in an environment of consistent support and firm enforcement of unambiguous rules.[63]

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[59] For example, OTA's Youth Advisory Panel pointed out that while they are formally instructed to abstain from sex, drinking, and drugs, they are bombarded daily with contradictory messages from the adult-controlled media.

[60] The University of Minnesota's survey of 37,000 7th- through 12th-grade public school students in 86 Minnesota school districts found that only about 45 percent of adolescents felt that *church leaders* cared about them, and that only about 41 percent of adolescents felt that "*school people*" cared about them (209). Perceptions that church leaders cared about them declined throughout adolescence, from approximately 50 percent of 7th graders believing that church leaders cared, to between 27 percent (metropolitan area females) and 45 percent (nonmetropolitan-area males) of 12th graders holding this belief (209). (Responses by grade were not reported for other categories of adults.) Overall, however, about 70 percent of adolescents felt that "*adults*" cared about them, and almost 90 percent felt that *parents* cared about them (209). However, only 65 percent of responding adolescents reported that they felt that their family cares about their feelings, 50 percent that their families paid a lot of attention to them, 45 percent that the people in their families understood them, and 45 percent that they had fun with their families (209). Between 13 percent (males) and 18 percent (females) felt that they wanted to leave home quite a bit or very much (209).

[61] See ch. 6, "Chronic Physical Illnesses: Prevention and Services," in Vol. II.

[62] Some negative attitudes toward adolescents are at least partially based in reality because some adolescents begin to engage in socially disapproved behaviors often more characteristic of adults (e.g., drug use, drunk driving, crime, out-of-wedlock pregnancy). However, because these behaviors are not normative, they may get more attention (e.g., in the media) than similar behaviors by adults. Acting on the availability heuristic (207), observers may tend to be believe that all adolescents, not just those reported on, are engaging in problem behaviors. In addition, as a function of their developing cognitive abilities (see ch. 2, "What is Adolescent Health?" in Vol. II), adolescents typically begin to question and criticize tradition in ways that may be uncomfortable for many adults (71).

[63] As described by Baumrind, "*Authoritative parents*, by definition, are not punitive or authoritarian. They may, however, embrace traditional values. Authoritative parents, in comparison to lenient parents, are more demanding and, in comparison to authoritarian-restrictive parents, are more responsive. Authoritative parents are demanding in that they guide their children's activities firmly and consistently and require them to contribute to family functioning by helping with household tasks. They willingly confront their children in order to obtain conformity, state their values clearly, and expect their children to respect their norms. Authoritative parents are responsive affectively in the sense of being loving, supportive, and committed: they are responsive cognitively in the sense of providing a stimulating and challenging environment. Authoritative parents characteristically maintain an appropriate ratio of children's autonomy to parental control at all ages. However, an appropriate ratio is weighted in the direction of control with young children and in the direction of autonomy in adolescence. Authoritative parents of adolescents focus on issues rather than personalities and roles, and they encourage their adolescents to voice their dissent and actively seek to share power as their children mature" (13).

In general, authoritative homes can be described as exhibiting a constellation of *warmth*, *democracy*, and *demandingness*. According to several comprehensive reviews of the literature on parenting practices and their outcomes, adolescents who grow up in authoritative homes score higher on indices of psychological development and mental health (including self-image, social integration, and ability to make independent decisions) than do adolescents from homes that are predominantly permissive, rejecting-neglecting, indifferent, or authoritarian (13,14,198). (*Authoritarian* (as opposed to *authoritative*) homes are those in which parents are harsh, rigid, and domineering, and exert rigid social controls.) For further discussion, see ch. 3, "Parents' and Families' Influences on Adolescent Health," in Vol. II.

However, even the execution of this model can obviously be open to some interpretation.

OTA believes, however, that this principle can be followed, though not without initial difficulty, from the highest levels of Federal coordination, through State, local, and school policy, to policies that provide parents of adolescents with guidance and time to spend with their adolescent children, to efforts that attempt to teach social competence to adolescents themselves. Adopting some or all of the strategies suggested in the remainder of this Report could also provide an indication that the Nation was becoming more supportive towards its adolescents.

Major Option 1: Congress Could Take Steps To Improve Adolescents' Access to Appropriate Health and Related Services

For a variety of reasons—adolescents' lack of financial or physical access, their need for confidential care and for providers who know how to work with adolescents, the types of health concerns experienced by adolescents (e.g., problems that may not be deemed clinically serious, problems that require intensive cognitive interventions, needs for preventive services), and adolescents' apparent lack of knowledge about gaining access to services—many American adolescents do not have effective access to care in the primary or specialty health services system or to related services.

Five general strategies Congress could pursue to improve adolescents' access to appropriate health and related services are listed in table 5 and discussed below. Each strategy would affect a somewhat different aspect of access, affect somewhat different numbers and groups of adolescents, and have different potential cost implications.[64]

Supporting the development of school-linked or community-based centers that offer adolescents comprehensive health and related services (e.g., care for acute physical illnesses, general medical examinations in preparation for involvement in athletics, mental health counseling, laboratory tests, reproductive health care, family counseling, prescriptions, advocacy, and coordination of care; and, perhaps, educational services, vocational services, legal assistance, recreational opportunities, and child care[65]) (Strategy 1-1) could potentially affect almost all adolescents.

Improving adolescents' financial access to health services (Strategy 1-2)—even if effected in the absence of comprehensive services—could touch the many adolescents without financial access to currently available health services (e.g., those adolescents with no health insurance; or with insurance that does not cover essential benefits (e.g., early intervention for family-related and other mental health problems)).

Improving adolescents' legal access to health services (Strategy 1-3) would affect access to health services for those adolescents who are on their own or who may be (or perceive themselves to be) in conflict with their parents on a particular health-related issue (e.g., sexuality counseling, need for contraception, mental health, substance abuse).

The fourth strategy—improving the quality of health care providers who work with adolescents (Strategy 1-4)—would affect both the accessibility and the appropriateness of care for almost all adolescents who come in contact with a health care provider, because many providers are not effective at identifying needs or coordinating needed care.[66]

The fifth strategy to improve access—empowering adolescents to gain appropriate access to health services by providing adolescents with important information about available health services and by encouraging their participation in the design and management of health services for adolescents (Strategy 1-5)—would affect a broad range of adolescents, particularly those who do not yet know how to be, and whose parents are not able to guide

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[64] Note that the estimates of cost are limited to short-term (up-front) costs to the Federal Government and are estimated extremely roughly and on a relative basis (e.g., the cost of funding a group to devise a model statute that could provide more uniformity in consent and confidentiality requirements affecting adolescents would be of much lower cost than Federal continuation funding for comprehensive school-linked health centers). More refined cost estimates would depend on a wide range of factors to be decided upon should Congress decide to act upon any of the strategies specified below (e.g., for comprehensive service programs: the number of such programs funded, the number of adolescents expected to use the programs, the types of services provided, the types of health care professionals used to provide the services; the types of financing mechanisms employed; the relative contribution of Federal and local authorities). It was beyond the scope of the present Report to estimate such a wide range of potential costs.

[65] Not all services are available at all centers. Referral and integration is an extremely important aspect of providing appropriate care for adolescents (15).

[66] See ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III.

Table 5—Strategies for Major Option 1: Congress Could Take Steps To Improve Adolescents' Access to Appropriate Health and Related Services

Strategy	Access issue addressed					Time for expected impact	Rough estimate of (direct) cost to Federal Government
	Physical	Legal	Knowledge	Affordability	Approachability		
Strategy 1-1: Congress could support the development of centers that provide comprehensive and accessible health and related services specifically for adolescents in schools and/or communities.							
1-1a: Provide Federal seed money for the development of school-linked and other community-based centers that provide comprehensive health and related services for adolescents.	X	X	X	X	X	Immediate and long term	Could be high
1-1b: Provide Federal continuation funding for already established school-linked and community-based centers that provide comprehensive services for adolescents.	X	X	X	X	X	Immediate and long term	Could be high
1-1c: Reduce existing barriers to the delivery of comprehensive services in adolescent-specific centers.				X	X	Near term; study needed	Medium
Strategy 1-2: Congress could take steps to improve adolescents' financial access to health services.							
1-2a: Mandate an immediate expansion of Medicaid eligibility for adolescents.				X		Immediate	Depends on utilization
1-2b: Mandate that employers provide health insurance for their currently uninsured workers and those workers' dependents.				X		Immediate	None
1-2c: Directly fund or provide incentives to States for outreach to increase adolescents' use of Medicaid benefits.			X			Immediate	Medium
1-2d: Discourage or prevent private insurers from implementing current plans to limit coverage of adolescent dependents.				X		Immediate and long term	None
Strategy 1-3: Congress could take steps to improve adolescents' legal access to health services.							
1-3a: Encourage the U.S. executive branch or a nongovernmental entity to develop a model State statute to enhance adolescents' legal access to health services.		X				Medium term	Low
1-3b: Enact legislation that requires specific Federal or Federal/State programs to adopt particular substantive policies with respect to parental consent and notification.		X				Immediate	Low
1-3c: Enact legislation conditioning States' receipt of Federal funds for specific purposes on the States' having particular substantive policies on parental consent and notification.		X				Medium term	Low

Continued on next page

Table 5—Strategies for Major Option 1: Congress Could Take Steps To Improve Adolescents' Access to Appropriate Health and Related Services—Continued

Strategy	Access issue addressed					Time for expected impact	Rough estimate of (direct) cost to Federal Government
	Physical	Legal	Knowledge	Affordability	Approachability		
Strategy 1-4: Congress could increase support for training of health care providers who work with adolescents.	X			X	X	Immediate and long term	High
Strategy 1-5: Congress could take steps to empower adolescents to gain access to health services.							
1-5a: Encourage efforts to educate adolescents, parents, health care providers, and others who may identify adolescent health problems and make referrals, about legal and other aspects of using health services.			X		X	Immediate	Low
1-5b: Provide incentives for or mandate adolescent participation in the design of programs and research that affect adolescents at the Federal, State, local, and private level.					X	Medium	Low

SOURCE: Office of Technology Assessment, 1991.

them in how to be, informed consumers in the fragmented U.S. health care system. Strategies to empower adolescents would work only if services were available, of course.

Strategy 1-1: Congress Could Support the Development of Centers That Provide Comprehensive and Accessible Health and Related Services Specifically for Adolescents in Schools and/or Communities

Recognition that many U.S. adolescents' needs for access to health and related services are not being met in the mainstream primary health care system has impelled a variety of groups and individuals to support the development of school-linked or community-based centers that offer comprehensive and accessible services designed specifically to meet adolescents' needs for physical accessibility, approachability, confidentiality, and low or no cost.[67] Most of these efforts are associated with schools (school-linked health centers), a few have been initiated by health care organizations (hospitals and health maintenance organizations), and apparently even fewer seem to be freestanding centers based in communities.[68]

Existing "comprehensive" centers vary considerably in the extent to which they provide a full range of health and related services for adolescents. One group has recommended that school-linked health centers provide, at a minimum, general medical, family planning, mental health, and social services (15). In addition, that group recommended exploring methods to expand traditional health services to include legal assistance, vocational guidance, learning disabilities assessment and planning, nutrition counseling, prenatal care, drug abuse assessment and counseling, and recreational opportunities, either directly or through community linkages. Some school-linked health centers provide these and other "expanded" services (e.g., child care services and parenting education for adolescent parents).[69]

Photo credit: © Peter Byron, Morris Plains, NJ

The defining feature of a comprehensive service center for adolescents is the extent to which the center attempts to be responsive to the specific needs of adolescents, for example, by having staff members who are knowledgeable about and caring toward adolescents.

In general, the types of services provided, and the structure of the service delivery system, seem to be determined by a combination of the needs of adolescents in a particular community,[70] funding and staffing limitations, and political considerations.[71] Beyond the actual services provided, the defining feature of a comprehensive service center for adolescents is the extent to which the center attempts to enhance adolescents' access to health care through mechanisms that are not typically found in the mainstream health services system:[72]

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[67] For further discussion, see ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III.

[68] The precise number of comprehensive service centers designed specifically to serve the needs of adolescents is not known (see ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III). Strategy 2-4 (below) addresses data collection issues pertaining to health services for adolescents.

[69] For a discussion of services provided by existing school-linked health centers, see ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III.

[70] Both the Robert Wood Johnson Foundation-funded school-based clinics and the State of New Jersey-funded school-linked health centers required documentation of extensive community involvement in planning for centers before such centers could be funded (136).

- free care or use of sliding fee scales[73];
- evening and weekend hours of operation[74];
- guaranteed confidentiality of services;
- employment of staff members who are committed to and enjoy helping adolescents; are knowledgeable about adolescent development, behavior, and health and social problems; and, optimally, come to see themselves as advocates for adolescents and actually serve as formal case managers to work together with individual adolescents to coordinate programs of care (321).

All of these mechanisms address access problems that affect adolescents particularly—for example, lack of money to pay for services or transportation, lack of convenient hours, concerns about confidentiality, and perceived lack of approachability of mainstream services.

Systematic evidence for the effectiveness of comprehensive service centers in terms of health *outcomes* for adolescents is sparse because few studies of such centers' effects on health outcomes have been conducted, and those that have been conducted have not been methodologically rigorous. Furthermore, a number of existing comprehensive centers have limitations related to insufficient funding, insufficient availability of providers, and a tendency to follow a "waiting model" of health care provision similar to that of the mainstream primary health care system.[75] Nonetheless, there is convincing evidence that school-linked and community-based comprehensive service centers for adolescents can improve access to health and related services needed by many adolescents.

Photo credit: © Randall Hagadorn, Titusville, NJ

There is as yet little systematic evidence that school-linked or community-based comprehensive service centers for adolescents improve health outcomes, but there is clear evidence that such centers can improve adolescents' access to the health and related services that are likely to be needed by adolescents.

Many schools, health care organizations, communities, and States that would like to offer adolescents' accessible "one-stop shopping," or better integrated services, for their health and related needs may not be able to establish school-linked or community-based comprehensive service centers. One reason is lack of funds. Several existing centers are in a precarious financial situation and may either have to close completely[76] or fail to completely implement their program designs (115).

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[71] For example, certain communities will object to having a school-linked health center that distributes contraceptives; others will object to such a center prescribing contraceptives (to be obtained elsewhere in the community); others may object to such a center including any facet of family planning or reproductive services. Anecdotal evidence suggests that some school-linked health centers have been blocked entirely because of fears that they will emphasize sexuality concerns; other school-linked health centers vary in the extent to which they provide services related to adolescent sexuality (see ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III).

[72] See ch. 6, "Chronic Physical Illnesses: Prevention and Services," in Vol. II, and in Vol. III, ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," ch. 16, "Financial Access to Health Services," ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," and ch. 18, "Issues in the Delivery of Services to Selected Groups of Adolescents."

[73] As noted in ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III, some observers have expressed grave concerns that the use of sliding fee scales, or any financial requirements, will reduce adolescents' perceived access to services.

[74] Evening and weekend hours are sometimes, but not always, an element of comprehensive service centers for adolescents.

[75] See ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III, for further discussion. Some of these problems could be addressed through the provision of additional funding to existing centers.

Funding is not the only barrier to the establishment of comprehensive centers. The association in the public mind of school-linked health centers and services related to adolescent sexuality and pregnancy seems also to have limited the extent to which such centers have been implemented (98,154,168). The threat such centers pose to organized medicine is another potential barrier (140).[77] To date, however, the livelihoods of mainstream health care providers have not been threatened by the implementation of comprehensive service centers for adolescents, because most centers have been provided in schools and communities where the most likely service users do not have health insurance and thus have little access to the mainstream health care delivery system.

Congressional recognition of U.S. adolescents' unmet needs for financially accessible and approachable health and related services and the ability of adolescent-specific school-linked and community-based comprehensive service centers to provide such services could help enormously to make such centers more acceptable to the public. Several States are beginning to implement school-linked health centers, and this development may be an indication that public opinion is shifting toward support for the idea of offering adolescents comprehensive and highly accessible health and related services.[78]

To support the development of centers that provide adolescents with comprehensive health and related services, Congress could follow one or more of three strategies: provide seed money for the development of school-linked or other community-based centers for adolescents (Strategy 1-1a), provide continuation funding for such centers (Strategy 1-1b), or reduce barriers to the delivery of comprehensive services in such centers (Strategy 1-1c) (see table 5).

Photo credit: Katherine Criss, New York, NY

To help improve U.S. adolescents' access to appropriate health and related services, Congress could provide seed money or continuation funding for school-linked health centers or other comprehensive service centers designed specifically for adolescents.

Strategy 1-1a: Provide Federal seed money for the development of school-linked and other community-based centers that provide comprehensive health and related services for adolescents.

The Federal Government could provide seed money for centers that provide comprehensive health and related services for adolescents by making grants to States, local governments, health care organizations, schools, or community-based private, not-for-profit organizations. Providing seed money would assist those schools, health care organizations, communities, and States currently without adequate financial resources to begin implementing school- or community-based comprehensive, accessible health and related services centers for adolescents.

It is important to note, however, that the State of New Jersey's School-Based Youth Services Center program found that merely proposing the provision of time-limited seed money to communities for support of comprehensive services was not sufficient to garner community interest (205). As a general matter, schools and communities are not likely to be interested in making the considerable investment required to start up a comprehensive program for service delivery only to have to dismantle the program for lack of continuation funding (see also 186). As described above,[79] Federal (as well as State, local, and private) support for adolescent health services is condition-specific and thus fragmented. The Door in New York City, which is widely regarded as the prototype of an integrated comprehensive service model for adolescents, is supported by more than 80 funding sources, including Federal, State, and local public agencies, private foundations, corporations, and individuals (77).[80]

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[76] For example, funding from the Robert Wood Johnson Foundation for school-linked health centers is scheduled to end in 1993. See ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III, for discussion.

[77] See ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III.

[78] As described in ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III, the States of Kentucky, Iowa, Florida, New York, and New Jersey are experimenting with providing comprehensive school-linked services to adolescents to one degree or another. Other local jurisdictions (Minneapolis; Pittsburgh; Cleveland; Washington, DC; Alexandria, VA) also provide support for such services (140).

Strategy 1-1b: Provide Federal continuation funding specifically for already established school-linked and other community-based centers that provide comprehensive services for adolescents.

Continuation funding for existing and future comprehensive health services centers for adolescents could help to maintain the existence of, and potentially strengthen, existing centers and (if seed money is provided) assure new centers that their initial intensive efforts will not be wasted. Continuation funding could be provided by Congress through matching grants to States, local governments, health care organizations, or schools.[81] Requiring local evaluation and local matching grants for continuation funding (as well as for seed money) would help to ensure local involvement, integration of existing services, and lack of duplication.

Strategy 1-1c: Reduce, through legislation or regulation, existing barriers to the delivery of comprehensive services in adolescent-specific centers.

Existing barriers to the delivery of low-cost services to adolescents in school-linked or other comprehensive adolescent service centers include State Medicaid administrative barriers limiting or prohibiting reimbursement for services delivered in school-linked health centers. They also include State, Medicaid, and private insurance restrictions on reimbursement of nonphysician providers.[82]

Removing such barriers to the delivery of low-cost services to adolescents in school-linked or other comprehensive adolescent service centers may be the weakest approach to supporting accessible, comprehensive services for adolescents, but still may be a somewhat effective strategy for increasing some adolescents' access to health services.

Issues—School- or community-based comprehensive and accessible care especially designed to meet the unique needs of adolescents is not a new idea (144,187). As noted above, several contentious and longstanding issues have slowed the development of such services, although a growing sense of the health care crisis among U.S. adolescents (8,29,153) is beginning to erode some impediments, at least at the local level.

Two of the most important issues with respect to the provision of care that can meet the needs of adolescents for confidential, approachable, comprehensive, no- or low-fee services are the issues of community and health care provider resistance. Federal backing would go a long way toward engendering public support for school-linked or other comprehensive services for adolescents, but Congress and the U.S. executive branch themselves have public concern about services related to adolescent sexuality to contend with (168). One way for Federal policymakers to help overcome local resistance to school-linked health centers would be to require centers receiving Federal funds to follow the current approach of gaining initial parental consent to provide services to adolescent children, either blanket consent or consent that excludes specified services. Alternatively, the Federal Government could either permit State or local grantees to exclude the provision of all or some family planning services (e.g., dissemination of contraceptives) from any federally funded program or could itself exclude such services.[83]

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[79] See section above entitled "What Is the Federal Government's Role in Improving Adolescent Health?"

[80] Importantly, the administration of The Door reports that it must make a special effort to obtain such funding and protect the professional staff from the perennial threat of the demise of specific programs (77). As described in ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III, staff also work to coordinate individually funded programs so that they work to benefit individual adolescent Door "members."

[81] As discussed below, such continuation funding could eventually be applied for by programs receiving seed moneys.

[82] OTA was unable to find data describing private insurance limitations on nonphysician health care providers, but private insurers may have such limitations.

Federal policymakers could encourage organized medicine's further acceptance of school-linked or other comprehensive services centers for adolescents by providing sufficient funding for mainstream providers to deliver services in such centers. Were physicians to dominate the provision of care in school-linked or community-based centers, however, this approach could unnecessarily increase the cost of providing services because not all—perhaps significantly less than all—adolescent health problems appear to require the direct services of a physician.[84] Instead, cutting-edge adolescent medicine training programs (including those few funded by the Federal Government) emphasize the necessity of an interdisciplinary approach to providing services to adolescents, involving nurses, nurse-midwives, nurse practitioners, psychologists, physician assistants, social workers, nutritionists, and health educators.[85] Ensuring adequate referral mechanisms to care providers in the community should be a sine qua non of a comprehensive approach to adolescent health care, and should help to alleviate mainstream health care providers' fear about being displaced. But confronting the range of financial, legal, quality, and informational barriers that prevent many adolescents from obtaining access to health services (Strategies 1-2, 1-3, 1-4, and 1-5, below) is necessary to help provide a truly integrated *system* of health care for adolescents.

Photo credit: Zacchaeus Medical Clinic, Washington, DC

Federal policymakers could encourage organized medicine's further acceptance of school-linked or other comprehensive service centers for adolescents by providing sufficient funding to allow mainstream providers to deliver services in such centers.

Even some supporters of school-linked and other centers that provide comprehensive health and related services for adolescents fear the implications of providing Federal support. One concern that arises with Strategies 1-1a and 1-1b above (and, to a lesser extent, to 1-1c) is that providing Federal funding for school-linked and community-based centers might lead to the entrenchment of the existing comprehensive service model, with its known limitations. To minimize this problem, it would be essential for the Federal Government to be

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[83] The statement of the National Conference of Catholic Bishops on school-based clinics suggests that either approach would have the possibility of gaining the support of this organization. In its 1987 position paper, the National Conference of Catholic Bishops acknowledged that the basic health care needs of many young people are not being adequately addressed, and suggested that school-based clinics "that clearly separate themselves from the agenda of contraceptive advocates may provide part of an effective response to the health needs of young people" (154). Although more than half of the school-based health centers surveyed by the Center for Population Options in 1988-89 provided *counseling* on birth control methods (94 percent of centers in high schools, and 73 percent of centers in junior high and middle schools), only 20 percent of all such centers actually dispensed birth control methods (92). In general, school-linked health centers have moved away from an exclusive emphasis on pregnancy prevention.

[84] This is not to say that a broad range of health care providers currently providing care in traditional settings (e.g., private offices, general community clinics) or potentially interested in adolescent clinics as alternative settings should not be adequately paid for their services. During their evaluation of six school-based clinics, Kirby and Waszak observed that cost-cutting measures led to heavy staff turnover, which reduced the continuity of the relationships that can be developed between clinic and students and, potentially, the clinics' effectiveness (105). Although the topic has been studied minimally, the few studies that have been conducted, the remarks of trusted observers and of adolescents themselves, suggest that the quality of the interpersonal relationship between health care provider and adolescent is essential to maintaining adolescent involvement in health care (115,122,235; see ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III).

[85] See ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III. As discussed in ch. 15, issues of leadership and role ambiguity can be pervasive in programs that do attempt to deliver care using an interdisciplinary approach.

flexible in providing Federal support for funding, to provide technical assistance to communities that wish to develop comprehensive services, and at the same time both require and provide support for rigorous evaluation of both the process and the outcomes of funded comprehensive services centers. In essence, a feedback mechanism for the continuing enhancement of health and related services for adolescents could be supported.

Other issues related to the development of new school- or community-based centers designed specifically to be responsive to the needs of adolescents include how to structure their services to be responsive to the needs of local adolescents and how to avoid potential duplication of services. Both issues can be addressed by ensuring that relevant community members (including adolescents) participate in the design of the services so that they meet local needs and do not duplicate, but are integrated with, existing services. Models for obtaining local involvement exist (36,205), and any Federal grant program could build in requirements for community participation. Structuring support in the form of a matching grant[86] could help to achieve continued local community involvement.

Two issues are particularly relevant to Strategy 1-1c (and perhaps to a lesser extent, to Strategies 1-1a and 1-1b[87]). One is that neither the full range of Medicaid and private insurance restrictions nor the number of comprehensive health services programs affected by them is currently known.[88] A study, perhaps by the General Accounting Office, specifying such limitations might be useful before Congress took action. The second is that the expansion of third-party payment as a source of funding for adolescent-specific comprehensive services programs may conflict with programs' objective of being responsive to adolescents' desire for confidentiality. Currently, parents, as the financially responsible parties, are almost always required to consent to the receipt of services provided to adolescents by health care providers. Even when parents of adolescents are not required to consent to health services, they almost always receive notification from Medicaid and private insurers that services have been rendered to their dependent children.[89] Further, some health care providers have expressed concern that billing for services adds an additional layer of complexity that may reduce adolescent accessibility to services (77). Any efforts to increase resources for adolescent-specific comprehensive health services through additional third-party payment would have to be carefully constructed.

Strategy 1-2: Congress Could Take Steps To Improve Adolescents' Financial Access to Health Services

For most individuals in the United States, coverage by health insurance is essential for gaining access to almost all health services. For almost all U.S. adolescents, health insurance is a necessary (though not always sufficient) element of access. One out of seven U.S. adolescents lacks any form of health insurance coverage (109).[90] Many uninsured adolescents are the dependents of parents who work,[91] but whose employment benefits do not include health insurance. One out of three poor adolescents does not have access to Medicaid.

There is accumulating evidence that private insurers, concerned about the rising cost of health care and health insurance, may cut back coverage for adolescents and other dependents, for insurance coverage as a whole, or for specific benefits.

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[86] For example, the State of New Jersey required a 25-percent matching grant from the local community; the matching grant could take the form of physical space or the provision of services as well as cash (205).

[87] The extent to which these issues are relevant to Strategies 1-1a and 1-1b depend on the overall structure of financing for comprehensive adolescent services.

[88] As of 1989, five States prohibited Medicaid payment for health services delivered in schools, even by physicians. States varied in the extent to which they permitted Medicaid coverage for nurses and other health care providers acting under the supervision of a physician (except that visits under the Early and Periodic Screening, Diagnosis, and Treatment program were not subject to limits). The Omnibus Budget Reconciliation Act of 1989 (Public Law 101-239) mandated State Medicaid coverage of certified pediatric and family nurse practitioners as of July 1, 1990 (see ch. 16, "Financial Access to Health Services," in Vol. III).

[89] Exceptions to these commonplace occurrences, and ways that some comprehensive services centers have sought and obtained third-party payment without impairing adolescent confidentiality, are discussed in chs. 15 and 16, in Vol. III.

[90] See also ch. 16, "Financial Access to Health Services," in Vol. III.

[91] For the most part, adolescents' insurance status reflects that of their parents, but 19 percent of uninsured adolescents (862,000 adolescents) live without their parents. The number who live without their parents and work at least 18 hours a week (and thus would be more directly affected by an employer mandate) is smaller (169,000). See ch. 16, "Financial Access to Health Services," in Vol. III.

Congress could adopt several strategies to address these financial access problems: mandate an immediate expansion of Medicaid (Strategy 1-2a), mandate that employers provide health insurance for their uninsured workers and dependents (Strategy 1-2b), fund Medicaid outreach efforts (Strategy 1-2c), and prevent private insurers from reducing coverage benefits (Strategy 1-2d) (see table 5).

Strategy 1-2a: Mandate an immediate expansion of Medicaid eligibility for adolescents.

One out of three (approximately 2.76 million) poor adolescents is not covered by Medicaid. The Omnibus Budget Reconciliation Act of 1990 (OBRA-90, Public Law 101-508) included provisions for a Medicaid expansion, but this expansion will not affect the current generation of adolescents. The number of adolescents potentially affected by a Medicaid expansion would depend on the specific terms of the expansion.[92] OTA estimated the effects of a range of specific terms for a Medicaid expansion. If all adolescents living in families with incomes up to 149 percent of the Federal poverty level were included and the categorical requirements of Aid to Families With Dependent Children (AFDC) were dropped (as required by OBRA-90), an estimated 2.7 million adolescents who are currently not eligible for Medicaid could be covered.

Concerns about costs may lead States and Federal policymakers to resist further Medicaid expansions. The actual cost of a Medicaid expansion would depend in part on whether such programs as Medicaid's Early and Periodic Screening, Diagnosis, and Treatment program (EPSDT) and other early interventions that are designed to detect and treat health problems before they become serious, result in long-term cost-savings to society, as they were designed to do.[93]

Photo credit: Office of Technology Assessment

Many uninsured adolescents are the dependents of parents who work but whose employment benefits do not include health insurance. A congressional mandate that employers provide health insurance benefits to all permanent employees who work 30 hours or more per week would expand health insurance benefits to 2.55 million uninsured adolescents.

Strategy 1-2b: Mandate that employers provide health insurance for their currently uninsured workers and those workers' dependents.

The number of adolescents affected by an employer mandate would depend on the specific terms of the mandate. A mandate that employers provide health insurance benefits to all permanent employees who work 30 hours or more per week would expand health insurance benefits to 2.55 million uninsured adolescents.[94] [95]

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[92] As noted in ch. 16, "Financial Access to Health Services," in Vol. III, OTA estimated that an immediate expansion of Medicaid eligibility for adolescents up to 100 percent of poverty that *retains current Aid to Families With Dependent Children (AFDC) categorical requirements* would cover 621,000 (13.5 percent) of those adolescents currently uninsured; this kind of expansion would be a step backward from the expansion voted under OBRA-90, which eliminates categorical requirements. Congress could support an immediate expansion of Medicaid eligibility for all adolescents up to 100 percent of poverty, *dropping all AFDC categorical requirements*; OTA estimates that this expansion would cover 40 percent (1.84 million) of uninsured adolescents. An additional 874,000 adolescents (19 percent of those who are uninsured) would be included if the income standard was raised to 149 percent of poverty, and all AFDC categorical requirements were dropped, bringing the potential total to 2.71 million adolescents. Other options (e.g., making adolescents up to 133 percent of the poverty level eligible for Medicaid), not examined quantitatively by OTA, are, of course, also possible.

[93] It should be noted, on the other hand, that many preventive and early intervention programs may in fact increase overall health care costs—their value lies in reduced suffering and, possibly, in increased productivity.

[94] OTA estimated that a congressional mandate that employers provide health insurance benefits to all permanent employees who work 30 hours or more per week would expand health insurance benefits to another 2.55 million uninsured adolescents (equal to 55 percent of those without health insurance coverage in 1987). An additional 255,000 adolescents (another 5.6 percent of those without health insurance coverage in 1987) would be covered by changing the mandate to 18 hours per week. See ch. 16, "Financial Access to Health Services," in Vol. III.

[95] Some adolescents covered by either of these two strategies would be covered under the other one as well. A *combination* of a Medicaid expansion to 149 percent of poverty (with AFDC categorical requirements dropped) and an employer mandate for those employees working 18 hours or more per week would cover 78 percent of uninsured adolescents. Those left uninsured would largely be dependents of the self-employed.

Just as there is State resistance to Medicaid expansions, there is considerable employer resistance to a Federal mandate for employer coverage. Much of the resistance stems from concerns about costs. Many employers have claimed that they would no longer be able to employ many of those employees who currently work fewer than 40 hours a week should there be such a mandate. OTA did not evaluate the validity of these claims. An employer mandate raises issues much more general than those related to adolescents' access to health services.

Strategy 1-2c: Directly fund or provide incentives to States for outreach to increase adolescents' use of Medicaid benefits.

In terms of the range of services covered, Medicaid appears in many ways to be the ideal health care coverage plan for adolescents. One example is the far-reaching EPSDT benefit, which now requires States to periodically screen Medicaid-eligible children and adolescents for any illnesses, abnormalities, or treatable conditions and refer them for definitive treatment. Medicaid is then required to cover the costs of any needed treatment.[96] However, as also discussed in chapter 16, "Financial Access to Health Services," in Volume III, Medicaid has many other limitations that may block the delivery of services to those in need. Unfortunately, much of the data on lack of adolescents' effective access to Medicaid is anecdotal.

Thus, the extent to which the adolescents who are eligible for Medicaid are not served is not known. Existing data are not very informative about the extent to which Medicaid-eligible adolescents get access to services:[97]

- the Health Care Financing Administration in DHHS estimates that adolescents ages 10 to 18 accounted for 17.1 percent of Medicaid enrollees in 1988 (4.6 million adolescents), and accounted for an estimated 6.9 percent of Medicaid program costs; and
- in 1988, Medicaid's per capita expenditures for EPSDT screening for adolescents ($4 per capita for 10- to 14-year-olds and $3 per capita for 15- to 18-year-olds) were one-third the per capita expenditures for younger children ($15 per capita for children under age 5).

Photo credit: Dion Johnson, Washington, DC

In 1988, Medicaid's per capita expenditures for screening of adolescents under the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) benefit were only about one-third the per capita expenditures for children under age 5.

Comparisons such as these may not be appropriate because the types of services needed by older individuals covered by Medicaid (e.g., nursing home services) are quite costly (175,253). However, these and other data suggest that the Medicaid program needs to do more to reach eligible adolescents if it is to be more than just a passive insurance plan and actually help those adolescents who are most in need.[98]

Strategy 1-2d: Discourage or prevent private insurers from implementing current plans to limit coverage of adolescent dependents.

Some or all of the approximately 21.7 million adolescents (70 percent overall) who are covered by private health insurance are potentially affected by any such moves by private insurers. Congress could perhaps require that adolescent dependents receive the same benefits as the primary beneficiary.

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[96] These and other EPSDT reforms were enacted as part of OBRA-89. Current EPSDT requirements are described in ch. 16, "Financial Access to Health Services," in Vol. III. To OTA's knowledge, a study of the extent to which States are implementing the OBRA-89 mandate to screen and treat Medicaid-eligible children has not been scheduled.

[97] The only data available are for 1988 and thus precede the enactment of OBRA-89. In addition, available data have certain shortcomings resulting from limitations in the Health Care Financing Administration's (HCFA) data system (see app. C, "HCFA's Method for Estimating National Medicaid Enrollment and Expenditures for Adolescents," in Vol. III). Nevertheless, they are the only quantitative data available.

[98] It is important to note that general and mental health hospital costs accounted for about two-fifths of Medicaid expenditures for 10- to 18-year-olds in 1988 (253).

An issue not addressed by requiring employers to maintain existing levels of coverage is that some adolescents with private insurance do not have the benefits they need to gain access to health services (e.g., preventive services, contraception, prenatal care, mental health services, substance abuse treatment, basic health services for adolescents in juvenile justice facilities). An option addressing the issue of benefits for adolescents under private health insurance policies is included under "Specific Findings and Policy Options" for chapter 16, below.

Previous attempts by States to mandate that private insurers provide benefits or coverage have resulted in employers turning to "self-insurance"[99]; additional mandates or requirements may accelerate this trend. Under the terms of the Employee Retirement and Income Security Act (Public Law 92-104), it is unlikely that the Federal Government can pass requirements that would affect self-insured plans. Further, employers and private insurers may have a point when it comes to restricting certain benefits: for example, there is little evidence for effectiveness of substance abuse treatment for adolescents or for the more expensive settings for mental health treatment. However, it seems unfair to restrict only some groups from gaining access to such treatments and settings.

Strategy 1-3: Congress Could Take Steps To Improve Adolescents' Legal Access to Health Services

The body of law that determines the extent of adolescents' involvement in decisions about their own health care is large and complicated because it is an amalgam of common law, State and other statutes, Supreme Court decisions, the decisions of other Federal and State courts, and regulations issued by government agencies.[100] From the standpoint of adolescents, their parents, and health care providers, among others, the law in this area is often unclear and inconsistent.

The common law rule, based in part on the assumption that children and adolescents are incapable of making mature decisions about their health care, is that adolescents' parents must give their consent for medical or surgical services provided to a minor child.[101] There are a multitude of exceptions to this rule, however, most of which are contained in State laws. States can modify the age of majority to confer on minors rights normally reserved for adults, and five States have enacted statutes that specifically authorize minors who have reached a designated age—ranging from 14 to 16—to consent to health care.[102] Furthermore, virtually all States allow all or some minors (e.g., those age 12 or 14) to obtain care for STDs without gaining their parents' consent.[103] Most States do not require that adolescents' parents be notified when adolescents obtain STD services, but about one-third of the States allow parental notification at the discretion of the health care provider. State laws governing minors' access to mental health services, services for drug and/or alcohol abuse, and other services vary widely across problem areas, and this may be appropriate. Among States, and even within a given State, however, the laws frequently seem to lack any coherent rationale. Restrictions on access to family planning and abortion services by adolescents are ultimately governed by Federal constitutional law as interpreted by the U.S. Supreme Court, and this law is in flux. Health care provider organizations' guidelines regarding consent and confidentiality in the provision of services to adolescents are often ambiguous, and individual providers have been found to vary considerably in their approach to these issues.[104]

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[99] A "self-insured" plan is a health benefit plan in which the financial risk for provided medical services is assumed by the employer or sponsor. From the time of the enactment of the Federal legislation that exempted self-insured plans from State mandates in 1974 to 1987, the percentage of employees covered by a self-insured, employer-sponsored conventional health plan rose from about 5 percent to nearly 60 percent. See ch. 16, "Financial Access to Health Services," in Vol. III.

[100] This body of law is summarized in ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III. For extensive legal citations on laws pertaining to adolescent health care decisionmaking, see J.D. Gittler et al., "Adolescent Health Care Decisionmaking: The Law and Public Policy" (76).

[101] The age of majority is 18 in all States but Alaska, Nebraska, and Wyoming, where it is 19.

[102] The five are Alabama, Kansas, Rhode Island, South Carolina, and Oregon.

[103] As noted in ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III, the terms used in these statutes vary. Some statutes allow minors to consent to services for "sexually transmitted disease"; other statutes use the term "venereal disease," or "'infectious, contagious, communicable, and reportable diseases."

Some empirical evidence indicates that parental consent and notification requirements may impose barriers to some adolescents' access to health services.[105] Specifically, adolescents in actual or potential conflict with their parents may not seek family planning services or even some other types of health services (e.g., those related to sexuality, substance use, and emotional upset) because they fear parental involvement (76,127,333). Concerns have also been raised that, as a concomitant of the parental consent requirement, parents may be able to "voluntarily" commit their adolescents to a mental health or substance abuse treatment facility without adequate safeguards to protect the rights of the adolescent.[106]

If it chose to, Congress could play a greater role than it typically has in the past in the formulation of public policies pertaining to the allocation of authority for adolescent health care decisionmaking. Two issues that would arise if Congress were to consider acting in this area are: 1) whether greater uniformity and coherence in laws governing consent and confidentiality in adolescent health care decisions is desirable, and 2) if so, what substantive policies should be adopted.

Photo credit: Sarah Hocut, Atlanta, GA

A few empirical studies suggest, though not conclusively, that at about age 14 adolescents may be as capable as young adults of making health care decisions. This evidence challenges one of the key assumptions that underlies legal requirements for parental consent.

In the interests of increasing adolescents' legal access to services, substantive policies could be changed to allow adolescents' greater autonomy in making decisions concerning their own health care. A small body of relatively methodologically sound research on the relationship between age and competence in health care decisionmaking suggests that adolescents age 14 or older may be as capable as young adults of making health care decisions (5,18,103,104,119,120,327), challenging one of the key assumptions that underlies requirements for parental consent and notification. The evidence is not as conclusive as one might like for policy decisions, however, and adolescents' capacity for making health care decisions is only one of many important considerations in determining whether adolescents should be able to consent to health services or to receive services without parental notification.[107] Other important considerations include the following:

- the interest of the State in promoting public health and ensuring that individuals have access to needed health services, in ensuring that parents assume responsibility for their children, in protecting family autonomy and privacy, and in maintaining family cohesiveness and stability;
- the interests of adolescents' parents in ensuring their children's welfare, in maintaining authority over their adolescent child, in protecting their family's autonomy and privacy, in directing the upbringing of their children, and in

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[104] See ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," and ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III.

[105] It is not clear that parental notification requirements are any less of a barrier to adolescents' access than parental consent requirements.

[106] Inpatient mental health services pose special problems in the area of consent. About two-thirds of States have statutes that allow parents, as a concomitant of the parental consent requirement, to make a "voluntary commitment" to a mental health facility of a minor child. These statutes vary substantially in the safeguards they provide against inappropriate hospitalization or institutionalization to manage "troublesome" minor children who may not have severe mental health problems (326).

[107] Because the existing literature on adolescents' capacity to consent is not conclusive and is focused mostly on white, middle-class adolescents, the option of funding additional studies on this topic is presented in table 24 in the section entitled "Specific Findings and Policy Options," below.

being protected from financial liability arising from the provision of health services to their children; and

- the interests of health care providers in providing services to adolescents that are consistent with their professional ethics and professional practices, in being able to receive compensation for their services, and in clear laws that enable them to avoid unintentional violations of those laws.[108]

There are sound reasons for promoting parental involvement in adolescent health care decisionmaking. As described in this Report, evidence suggests that appropriate parental and family involvement with adolescents is essential to adolescents' optimal development and functioning.[109] In some situations, however, parents do not act in the best interests of their adolescent children,[110] and adolescents may delay receiving appropriate health care services for fear of parental involvement.[111] Three strategies for improving adolescents' legal access to health and related services that Congress might want to consider are encouraging the development of a model State statute (Strategy 1-3a), requiring specific Federal or Federal/State programs to adopt particular substantive policies with respect to parental consent and notification (Strategy 1-3b), and conditioning States' receipt of Federal funds for specific purposes on the States' having particular substantive policies with respect to parental consent and notification (Strategy 1-3c).

Strategy 1-3a: Encourage the U.S. executive branch or a nongovernmental entity to develop a model State statute to enhance adolescents' legal access to health services.

Congress could encourage the U.S. executive branch or a nongovernmental entity to lead in the development of a model State statute that would potentially enhance adolescents' legal access to health services by increasing their autonomy in decisions about their health services. The model State statute might be used to inform State policies regarding consent and confidentiality in adolescent health care decisionmaking. This would be true even if the statute were not adopted in its entirety by all States.

Photo credit: Center for Youth Services, Washington, DC

There are sound reasons for promoting parental involvement in adolescents' health care decisionmaking. Available evidence suggests that appropriate parental and family involvement with adolescents is essential to adolescents' optimal development and functioning.

Optimally, the development of a model State statute would involve a variety of all relevant parties, including parents, advocates for adolescents, third-party payers, community leaders, ethicists, experts in informed consent, developmental and social psychologists, historians of childhood and adolescence, health care providers, lawyers, and adolescents themselves. Relevant studies and testimonial evidence, considered dispassionately and systematically, could be brought to bear.

The financial costs to the Federal Government of funding a study group to develop a model State statute would be relatively low, although any improved access to health services by adolescents might prove costly in the near term.[112] The potential exists, however, that the model statute that is developed could be: 1) more restrictive than what currently exists in some States and case law, and so further limit adolescents' access to care; 2) so unrestrictive as to *inappropriately* reduce parental involvement in the parent-child relationship; or 3) so nebulous as to be unhelpful.[113] Nonetheless, the legal barriers to access that adolescents in conflict or potential conflict with their parents face as a result of the present legal situation make taking the risk of attempting to develop a model statute seem worthwhile.

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[108] See box 17-B, "A Conceptual Framework To Aid Public Policymakers in Formulating Policy Related to the Allocation of Authority for Adolescent Health Care Decisionmaking," in ch. 17 in Vol. III.

[109] Several approaches for increasing support for adolescents' families are discussed in Strategy 3-1 in Major Option 3, below.

[110] See primarily ch. 3, "Parents' and Families' Influence on Adolescent Health," in Vol. II, but also ch. 11, "Mental Health Problems: Prevention and Services"; ch. 12, "Alcohol, Tobacco, and Drug Abuse: Prevention and Services"; ch. 13, "Delinquency: Prevention and Services"; and ch. 14, "Homelessness: Prevention and Services," in Vol. III.

[111] See especially ch. 9, "AIDS and Other Sexually Transmitted Diseases: Prevention and Services," in Vol. II, and ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III.

To make their task more manageable, the individuals developing the model statute might want to focus on developing model statutes in certain critical areas, such as policies to permit confidential access to mental health, drug/alcohol treatment services, pregnancy-related services, contraceptive services, and HIV testing and STD treatment services for a broader range of adolescents; policies to eliminate inappropriate "voluntary" commitments of adolescents to inpatient mental health facilities by their parents; and, possibly, policies to provide more workable alternatives to parental notification for abortion.

Strategy 1-3b: Enact legislation that requires specific Federal or Federal/State programs to adopt particular substantive policies with respect to parental consent and notification.

Congress authorizes and appropriates funds for a variety of Federal and Federal/State programs that provide adolescent health services or reimbursement for such services, for example,

- Medicaid,
- the maternal and child health services block grant program authorized under Title V of the Social Security Act,
- the family planning program authorized under Title X of the Public Health Service Act, and
- the alcohol, drug abuse, and mental health services block grant program authorized under Title XIX of the Public Health Service Act.

The Federal laws authorizing and appropriating funds for these programs and the regulations and rules issued by agencies administering these programs at the Federal level generally do not deal directly with questions of whether adolescents must have parental consent to participate in the programs, whether parents must be notified of adolescents' participation in the programs, or whether health care records and communications between program service providers and adolescents are confidential vis-a-vis their parents.[114] In the absence of explicit directives from Congress or Federal agencies, the administrators of federally funded programs are free—so long as they remain within the parameters imposed by State law and Federal constitutional law—to establish their own policies regarding parental consent and notification requirements and the confidentiality of records and communications involving minors.[115]

Congress could enact legislation that requires Federal and Federal/State programs that provide health services for adolescents or reimbursement for such services to adopt particular substantive policies with respect to the allocation of authority for adolescent health care decisionmaking. Enacting legislation that requires Medicaid to increase adolescents' autonomy in decisions about their health services could help to improve access for poor Medicaid-eligible adolescents. It could also signal a new direction to other third-party payers in the development of policies to permit confidential access to mental health, drug, contraceptive, and STD treatment services for a broader range of adolescents; and policies to prevent inappropriate, involuntary hospitalizations of adolescents for mental health and substance abuse treatment.

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[112] See above for the argument, as yet unproven, but likely, that access to some early intervention services would be cost-saving in the long-term.

[113] Such is largely the case with the ethical statements on this issue of several health care provider organizations. See ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III.

[114] There have been exceptions, for example a rule issued by DHHS in 1987, which prohibits federally funded alcohol or drug abuse programs from notifying a minor's parent of the minor's application for treatment without the minor's consent, but only in States where State law permits minors to obtain alcohol or drug treatment without parental consent (42 CFR, Part 2 2.214 (1989)).

[115] In 1983, DHHS unsuccessfully attempted to promulgate regulations requiring that family planning clinics receiving Federal funds under Title X of the Public Health Service Act notify parents of unemancipated minor children when contraceptives were prescribed. These regulations—issued pursuant to a congressional amendment to the authorizing statute for the Title X program that provided that "[t]o the extent practicable, entities which receive grants or contracts under this subsection shall encourage family participation in projects assisted under this section (42 U.S.C sec. 300(a)(1982))—aroused a great deal of controversy and were the subject of litigation in the Federal courts. Ultimately, two Federal courts enjoined DHHS from implementing the regulations.

Strategy 1-3c: Enact legislation conditioning States' receipt of Federal funds for specific purposes on the States' having particular substantive policies on parental consent and notification.

Exceptions to the common law requirement for parental consent and legal provisions pertaining to parental notification have generally been carved out by State courts and legislatures. The extent to which States currently allow minors to obtain services on their own (i.e., without parental consent or without either parental consent or notification) varies widely.

- Most States already allow all minors (or minors of a certain age, e.g., 12 or 14) to obtain diagnosis and treatment *services for STDs* (sometimes termed "venereal diseases" or "infectious, contagious, communicable, and reportable diseases," as noted above) without parental consent. Nearly two-thirds of States provide that STD services may be furnished without parental notification; most of the others give health professionals discretion to notify parents.
- Only a few States currently have statutes that expressly authorize minors to consent to or receive *HIV testing* without parental consent. These laws vary with respect to parental notification requirements (e.g., some give providers discretion; one State requires notification if the test is positive).
- A little under half of States have statutes providing that minors (or minors who meet specified criteria) may obtain without parental consent *family planning services* (variously described as "contraceptives," "birth control services," or "services for the prevention of pregnancy"). Only a few of the State statutes that permit minors to consent to family planning services without parental consent have provisions pertaining to parental notification of the minor's application for receipt of such services, and nearly all of them allow, but do not compel, parental notification.[116]
- About one-quarter of States have enacted statutes requiring parental consent to *abortion* for minors. Some of these State statutes have been invalidated or are currently being challenged on constitutional grounds, however, so not all of the statutes are currently being enforced.[117] A little under one-quarter of the States have statutes requiring parental notification of a minor's abortion decision.[118]
- Over half of States have statutes allowing minors to consent to *pregnancy-related services* (e.g., testing to determine pregnancy, prenatal care, and delivery services). Most of these statutes do not require parental notification. About one-fourth of the States have statutes that provide for parental notification at the discretion of health professionals.
- All but five States (Alaska, Arkansas, Oregon, Utah, and Wyoming) have statutes specifically authorizing minors to consent to services related either to *treatment for drug abuse*, to treatment for *alcohol abuse*, or to treatment for both drug and alcohol abuse. Some of these statutes apply only to minors who have reached a designated age, ranging from 12 to 16 years of age. The various statutes exhibit considerable variation when it comes to parental notification provisions.

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[116] The U.S. Supreme Court ruled in *Carey* v. *Population Services International* (431 U.S. 678 (1977)) that minors as well as adults have a constitutionally protected right of privacy with respect to the use of contraceptives and that State restrictions on a minor's privacy rights are valid only if they serve any significant State interest . . . that is not present in the case of an adult." As of 1990, the U.S. Supreme Court had not directly addressed the constitutionality of parental notification requirements that involve parents in decisions involving minors' use of family planning services.

[117] Federal constitutional law regarding the permissible scope of State regulation of abortion is in flux. In the wake of its landmark 1972 *Roe* v. *Wade* decision (410 U.S. 113 (1973)), the U.S. Supreme Court issued several decisions that have extended to minors at least some constitutional protections with respect to abortion (e.g., any parental consent requirement for a minor's abortion must be coupled with a "judicial bypass" procedure that allow a minor to secure court approval for an abortion if she can meet certain requirements). Notable Supreme Court decisions dealing with parental consent to a minor's abortion include *Planned Parenthood of Missouri* v. *Danforth* (428 U.S. 52 (1976)), In *Bellotti* v. *Baird* (Bellotti II) (443 U.S. 622 (1979)), *City of Akron* v. *Akron Center for Reproductive Health, Inc.* (462 U.S. 416 (1973)), and *Planned Parenthood Association* v. *Ashcroft* (462 U.S. 476 (1983)). A 1989 case that did not directly address the question of parental consent, *Webster* v. *Reproductive Health Services* (109 S. Ct. 3040 (1989)), appears to give States greater leeway in restricting abortions generally and has raised questions about whether past Supreme Court decisions dealing with abortion will stand.

[118] The U.S. Supreme Court has not dealt extensively with parental notification in cases involving abortion services for minors. In June 1990, however, the Court handed down two decisions that may furnish the impetus for further State legislative activity aimed at requiring parental notification in the case of a minor's decision to have an abortion, *Hodgson* v. *Minnesota* (110 S. Ct. 2926 (1990)) and *Akron Center for Reproductive Health* (110 S. Ct. 2972 (1990)).

- A little under half of States have statutes that allow minors of a certain age to obtain *outpatient mental health services* without parental consent. The majority of statutes are silent as to parental notification, but the others have varying provisions.
- Concern about the overuse of *inpatient mental health treatment* for children[119] is increasingly encouraging States to move in the direction of making it more difficult for parents to commit their dependent children to inpatient psychiatric facilities (73a).[120]

If Congress decides that greater coherence and uniformity in State laws is desirable, it could enact legislation conditioning States' receipt of Federal funds for specific purposes on the States' having statutes or administrative rules and regulations that incorporate particular substantive policies with respect to health care decisionmaking by and for adolescents. To OTA's knowledge, this approach has not been used by Congress in this realm to date.

What substantive requirements should be adopted would depend on policymakers' judgments regarding the appropriate balancing of the interests of the state, adolescents, parents, and health care providers (see discussion above). Different sets of rules may appropriately govern the allocation of decisionmaking for adolescents of different ages and for different types of services. In other words, the rules governing the allocation of decisionmaking authority for young adolescents may be different from those governing the allocation of authority for older ones. Also, the rules that govern the allocation of decisionmaking authority for STD treatment, for family planning services, for mental health services, for substance abuse treatment and counseling, for abortion, and for other services may all be different.

A Federal requirement conditioning States' receipt of specified Federal funds on their allowing adolescents who meet certain requirements to consent to treatment for STDs might not be particularly onerous or controversial, because (as noted above) most States already allow minors to consent to such treatment as a public health measure. Fewer States have statutes allowing minors to consent to other types of services (contraceptives, outpatient mental health services, drug/alcohol treatment services), so the imposition of a Federal requirement giving adolescents' greater autonomy in these areas might be more difficult. Any requirement having to do with abortion is likely to engender considerable political opposition.

Strategy 1-4: Congress Could Increase Support for Training of Health Care Providers Who Work With Adolescents

Many health care providers report, and objective evidence also suggests, that health care providers across disciplines (e.g., physicians, nurses, psychologists, social workers, nutritionists) are often unequipped to deal with issues that may be presented by adolescents during a health care visit.[121] Adolescents report that they are sometimes reluctant or unwilling to consult with private physicians on sensitive issues (e.g., those related to sexuality or mental health problems), and the health issues of concern to adolescents often differ from those discussed by health care providers.[122]

To improve the quality of care and the approachability of care as perceived by adolescents, Congress could increase support for a range of training through a multiplicity of approaches, including:

- continuing education for health care providers already in practice and interested in treating adolescents;
- training in adolescent health issues for trainees who are likely to see adolescents in their practices; and
- specialized interdisciplinary training for those who plan to work exclusively with adolescents.

Such a multiplicity of approaches would affect all adolescents who come in contact with a health care provider, although not immediately.

Issues—Several considerations may limit the feasibility of increasing support for training of

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[119] See ch. 11, "Mental Health Problems: Prevention and Services," in Vol. II.

[120] In 1990, Oklahoma, Virginia, and Wyoming enacted such laws (73a).

[121] This problem is discussed at length in ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III.

[122] For further discussion, see ch. 6, "Chronic Physical Illnesses: Prevention and Services," and ch. 11, "Mental Health Problems: Prevention and Services," in Vol. II and ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," and ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III.

Photo credit: © Randall Hagadorn, Titusville, NJ

Specialized interdisciplinary training for health care providers who work with adolescents is deemed essential to providing comprehensive, coordinated health services, but Federal support for interdisciplinary training programs has declined since 1980.

health care providers who work with adolescents. One is that support for such training would be costly. Second, it is not clear that sufficient numbers of health care professionals are available to be appropriate trainers. Third, specific criteria for training programs have not been adequately evaluated in terms of effectiveness in ameliorating adolescent health problems or patient satisfaction. The second problem will clearly take years to address fully, but neglecting to move now will make the situation in the future even worse. To deal with the third problem, a rigorous evaluation component could be a required condition of support for training, and the Federal Government could help by providing technical assistance (e.g., on adolescent development and health, on interpersonal styles relevant to adolescents) to training programs.

Strategy 1-5: Congress Could Take Steps To Empower Adolescents To Gain Access to Health Services

Information is generally scarce, but adolescents seem largely disengaged from the health services system. Adolescents, like most health care consumers, are rarely involved the design of services (225). In addition to taking steps to increase the physical availability, financial accessibility, legal accessibility, and approachability of the services themselves, Congress could take steps to empower adolescents in relation to the delivery of services. Empowerment approaches take as a given that individuals, not just professionals, have a set of competencies, that these competencies are useful in the design and management of services, and, further, that those competencies can be even more fully developed by giving individuals additional opportunities to control their own lives (e.g., 173). Thus, in addition to empowerment's benefits for individual adolescents' sense of competency, more proactive involvement of adolescents in the design of services would have the benefit of making those services more responsive to the more concrete health-related needs of adolescents. Strategies for adolescent empowerment could involve two approaches: one is to support efforts to educate adolescents about various aspects of using health and related care services (Strategy 1-5a); the second is to support the provision of opportunities for adolescents to participate in decisionmaking about the design and management of health services (Strategy 1-5b).

Strategy 1-5a: Encourage efforts to educate adolescents, parents, health care providers, and others who may identify adolescent health problems and make referrals, about the legal and other aspects of using health services.

The provision of health care services in the United States is complicated, and consumers must be educated to use health services appropriately and when they are needed. Systematic evidence is scant, but available data suggest that, in many respects, adolescents have insufficient information to be active, engaged health care consumers. Striking examples can be found in the report of the National Adolescent Student Health Survey (10). With respect to knowledge about *when* to seek health care services for STDs, for example, 33 percent of students surveyed (8th and 10th graders) did not know that a sore on the sex organ is a common early sign of an STD; 44 percent did not know that a discharge of pus from the sex organ is a common early sign of an STD; 41 percent did not know that experiencing pain when going to the bathroom is a common early sign of an STD; and 43 percent did not know that it is harmful to wait to see if the signs of STDs go away on their own (10). With respect to *how* to gain access to treatment for STDs, 76 percent of the adolescents surveyed were either unsure or mistakenly believed that the Public Health Department must inform parents about STDs in patients under age 18; 79 percent were either unsure or mistakenly believed that most clinics must have parental permission to treat patients under age 18 for STDs; and 39 percent reported that they would not know where to go for medical care if they thought they had an STD (10). With respect to suicide prevention, approximately one-third of students surveyed did not recognize common signs of possible suicide, and 65 percent of adolescents surveyed could not or did not know whether they could locate a community agency for suicide prevention (10). As noted above (Strategy 1-3 on improving adolescents' legal access to services), laws pertaining to adolescent consent and confidentiality are inconsistent not only across States, but across problem and service areas within States; thus, it is not surprising that adolescents may be ill-informed about access to health services.

Issues—Knowledge about the availability and need for health services imparted independently to adolescents could be perceived (as health education often is) as interfering with parental prerogatives. But in fact, if done well, it could open up avenues for parent-child discussion, and opportunities for parents to help educate their children about using health care services. Adolescents who objected to certain restrictions, rights, or lack of services, might be stimulated to become involved in the political system. Consideration would have to be given to delivering the information in a developmentally appropriate manner, based on the adolescent's actual needs. Currently, the appropriateness of information to developmental and experiential status is recognized as an important aspect of health education, but approaches to developing and imparting information appropriately have not been wholly crystallized (29,153,279). More participatory approaches to health education for adolescents should help (see Major Option 2, Strategy 2-2b on supporting innovative health education research and demonstration projects, below), as should greater training in adolescent development and health issues for health educators and other health care providers (see Major Option 1, Strategy 1-4 on increasing support for such training, above).

Photo credit: Kaiser Teen and Young Adult Health Center, Granada Hills, CA

Adolescent participation in health services planning can take the form of special adolescent advisory panels or adolescent representatives on general advisory boards. The Kaiser Permanente health maintenance organization in Granada Hills, California, asks adolescents to provide advice on a regular basis.

Strategy 1-5b: Provide incentives for or mandate adolescent participation in the design of programs and research that affect adolescents at the Federal, State, local, and private level.

Adolescent participation can take the form of special adolescent advisory panels such as the Youth Advisory Panel that assisted in the preparation of this OTA Report (see app. A, "Method of the Study") or of adolescent representatives on general advisory boards.[123] Several organizations have been experimenting with adolescent participation (e.g., the Center for Population Options, the Child Welfare League, the Kaiser Permanente health maintenance organization in the Los Angeles area) and should be able to provide advice to organizations interested in involving adolescents in governance.[124]

Issues—Taking adolescents' views into account is a difficult process that may be unfamiliar to many professional organizations. Not only will the usual conflicts between citizens and professionals be at issue (269), but professionals and adolescents are particularly likely to have different styles of communication and understandings of system limitations. Adolescent involvement can be expected to be time-consuming and may require additional sensitivity training for professionals and adolescents. Thus, if such participation is mandated or encouraged, it should be accompanied by appropriate supports.

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[123] Some elements of the executive branch are showing interest in the concept of empowerment as a strategy for helping to improve individuals' life situations (55). Explicit government support for citizen participation in human services programs was more prevalent in the 1970s. For example, the Community Mental Health Centers Amendments of 1975 (Public Law 94-63) included requirements for citizen participation in governance and in program evaluation, but the requirement for citizen evaluation was overturned with the enactment of alcohol, drug abuse, and mental health block grant legislation (Public Law 97-35) (268,269). The National Institute of Mental Health reported in 1984, however, that citizen evaluation in mental health services seemed to be "well-established" (269). Existing requirements for citizen participation in research, services, and program evaluation include the national advisory boards of various Public Health Service and National Institutes of Health agencies (research), and the Working Group for Community Development Reform (monitoring and evaluation of community development block grants), financed through a Title IX grant from the Community Services Administration in DHHS.

[124] The Young Americans Act (Public Law 101-501) (discussed below) requires the participation of young people in the Federal Council on Children, Youth, and Families and the 1993 White House Conference on Children, Youth, and Families established by the act.

Major Option 2: Congress Could Take Steps To Restructure and Invigorate the Federal Government's Efforts To Improve Adolescents' Health

As noted earlier, OTA found that Federal efforts in the area of adolescent health are undertaken by a broad range of U.S. executive branch agencies and congressional committees (see tables 2 and 3 in "Major Findings"). Generally speaking, Federal efforts tend to be condition-specific rather than population-specific. A major consequence is that adolescent health initiatives by the Federal Government are often seriously fragmented and inappropriately focused. Many important adolescent health issues lack visibility and attention.

Five general strategies Congress could follow to restructure and invigorate the Federal Government's efforts to improve U.S. adolescents' health are shown in table 6. To address the issues of fragmentation, inappropriate focus, and lack of visibility for adolescent health issues, Congress could create the locus for a strong Federal role in addressing adolescent health issues (Strategy 2-1). Other strategies would be to encourage the U.S. executive branch to invigorate traditional Federal activities in program development (Strategy 2-2), basic research (Strategy 2-3), and data collection (Strategy 2-4). The most ambitious approach would be to combine all four of these approaches (Strategy 2-5).

Strategy 2-1: Congress Could Create a Locus for a Strong Federal Role in Addressing Adolescent Health Issues

Even if Congress acted on many of the suggestions in this Report, specific incremental improvements in and of themselves are unlikely to have very much impact without some central locus from which adolescent health efforts can be monitored and either directed or coordinated. Currently, at least seven Cabinet-level departments in the U.S. executive branch (Health and Human Services, Education, Defense, Labor, Transportation, Justice, and Agriculture) and two independent agencies (ACTION and the Consumer Product Safety Commission) have a major role in addressing adolescent health and related issues (see table 2 and figure 13 in "Major Findings"). Numerous agencies within DHHS (and to a lesser extent, the other departments) are involved in adolescent health issues. But no single Federal agency has the mandate or resources to oversee the many diverse issues and programs related to adolescent health. In 1990, the 101st Congress enacted the Young Americans Act as part of the reauthorization of the Head Start program (Public Law 101-501). Modeled after the "Older Americans Act," the legislation aims to create a coordinated Federal response to the multiple needs of children.[125] Although many of the program areas mentioned in the legislation are specific to adolescents (e.g., teen parenting support, teen pregnancy prevention), and others are relevant to adolescents (e.g., housing and shelter assistance, education and training services, protective services, recreational and volunteer opportunities, community referral services, outreach services), it is still too early to tell how much adolescent issues will be emphasized in the implementation of the legislation.

OTA finds that a number of functions that are related to improving adolescent health are not being adequately performed. These functions (listed below)

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[125] The new law establishes several Federal initiatives to promote "the best possible physical and mental health" for all children and youth, including:
- an office of "Commissioner" within the Administration on Children, Youth, and Families of DHHS, to serve as an advocate for children across Federal agencies;
- a State grant program to assist States with the planning and coordination of services and developing family resource and support programs;
- a National Center on Family Resource and Support programs to gather and disseminate information and provide training on family resources and support programs;
- a Federal Council on Children, Youth, and Families to evaluate Federal policies and programs affecting young people and advise the President on such issues; and
- a 1993 White House Conference on Children, Youth, and Families to examine issues affecting children and youth and make recommendations for further action.

Table 6—Strategies for Major Option 2: Congress Could Take Steps To Restructure and Invigorate the Federal Government's Efforts To Improve Adolescents' Health

Strategy	Policy issue addressed	Time for expected impact	Rough estimate of (direct) cost to Federal Government
Strategy 2-1: Congress could create a locus for a strong Federal role in addressing adolescent health issues.			
2-1a: Create a new Federal agency at the Cabinet level, with line responsibilities, to undertake broad efforts related to improving adolescents' health.	Highest coordination, highest visibility for adolescent issues	Immediate	High
2-1b: Create a new Federal agency at the Cabinet level, but without line responsibilities, to coordinate efforts related to adolescent health.	Some coordination, high visibility for adolescent issues	Long term	Medium
2-1c: Create a new agency within an existing Cabinet department (e.g., U.S. Department of Health and Human Services) to address adolescent health issues.	Coordination, visibility for adolescent issues	Medium term	Medium
2-1d: Mandate the creation of a strong interdepartmental, interagency adolescent health coordinating body.	Coordination	Long term	Low
Strategy 2-2: Congress could encourage the U.S. executive branch to invigorate traditional Federal activities in program development.			
2-2a: Encourage the U.S. executive branch to support program development or demonstration projects in specific neglected or promising areas related to the prevention and treatment of adolescent health problems.[a]	Provide needed services, enhance future policy decisions	Immediate and long term	Depends on number and type of activities supported
2-2b: Provide support for multisite rigorous research and demonstration projects that test and compare suggested new comprehensive and innovative models of education for health.	Provide needed information to adolescents, enhance future policy decisions	Immediate and long term	Medium
Strategy 2-3: Congress could encourage the U.S. executive branch to invigorate traditional Federal activities in research on adolescent development.			
2-3a: Require the U.S. executive branch to establish a permanent council or councils to provide ongoing advice to Federal agencies on research directions in adolescent health.	Coordination, raise level of research, attention to important issues, innovation	Short to medium term and long term	Low[b]
2-3b: Support, or encourage the U.S. executive branch to support, a symposium or symposia on adolescent research issues.	Coordination, raise level of research, attention to important issues, innovation	Longer term	Low[b]
Strategy 2-4: Congress could encourage the U.S. executive branch to invigorate traditional Federal activities in data collection.			
2-4a: Require the appropriate U.S. executive branch agency to provide Congress with periodic (e.g., every 2 years) reports on the health status of U.S. adolescents and require that these reports be made available to the public.[c]	Coordination, visibility, U.S. executive branch accountability, resource planning	Immediate and long term	High
2-4b: Support and encourage local efforts to collect adolescent health information that will be, at least in part, able to be compared to national level data.	Resource allocation	Longer term	Could be high
Strategy 2-5: Congress could create a locus for a strong Federal role in addressing adolescent health issues and invigorate traditional Federal activities in program development, research, and data collection.	Depends on specific strategies selected	Depends on specific strategies selected	Depends on specific strategies selected

[a] Specific areas found by OTA to be in particular need of development are listed in table 7.

[b] Does not include the cost of funding actual research.

[c] Congress could frame the request in such a way that specific health-related findings for specific age, gender, racial, ethnic, income, regional, and residential groups are highlighted. This would encourage the collection of appropriate data.

SOURCE: Office of Technology Assessment, 1991.

could be undertaken by a new adolescent health agency or coordinating body:

- monitoring of trends in adolescent health;
- coordination of research;
- overseeing the design of, support for, and evaluations of, adolescent health services;
- overseeing and coordinating training for service providers who work with adolescents;
- providing a focal point for adolescent participation in policymaking;
- providing a focal point for a national advisory body on adolescent issues;
- coordinating the diverse activities of Federal agencies as they relate to adolescents;
- interpreting and overseeing congressional mandates; and
- advising Congress on adolescent health issues.[126]

Congress could take any of several approaches to the creation of a locus for a strong Federal role in addressing adolescent health issues: create a new Federal agency at the Cabinet level with line responsibilities (Strategy 2-1a) or without line responsibilities (Strategy 2-1b) or create a new Federal agency within an existing Cabinet department (Strategy 2-1c) or create a new interdepartmental, interagency adolescent health coordinating body (Strategy 2-1d) (see table 6).

With the adoption of any of these strategies, two issues will remain. One is how to design Federal policy so that it would be refocused to reflect a new approach that reflects the guiding principles of attention to adolescent environments (in addition to their behaviors and disorders) within a prolonged sympathetic and supportive context. The mere existence of a new agency or coordinating body, even though such a body would raise the visibility of adolescent health issues, would not be enough to accomplish this goal; congressional oversight could ensure that this approach is followed. The recently enacted Young Americans Act takes an exemplary approach because it is aimed at improving social environments for young people and their families by emphasizing the creation of programs that: support families, create community referral services, and provide high-quality educational opportunities (Public Law 101-501, Title IX, Chapter 2, Sec. 932).

The second issue is to which congressional committee(s) a new adolescent health agency or coordinating body would report in the Congress. Currently, multiple congressional committees have interests in and jurisdiction over specific adolescent issues (see table 3 in "Major Findings"). The variety of congressional mandates is one reason cited by executive branch agency representatives for the current lack of coordination on adolescent health issues in the executive branch.

Strategy 2-1a: Create a new Federal agency at the Cabinet level, with line responsibilities, to undertake broad efforts related to improving adolescent health.

The advantages of having a new Cabinet-level agency with line responsibilities is that such an agency would be highly visible, would have the authority to perform many of the functions that are widely regarded as needed (see above), and, importantly, would cross current departmental lines. On the other hand, creating a separate department solely for adolescent health and related issues might create an unwanted precedent. Further, it could not fully resolve redundancies and gaps across topics (e.g., highway safety, disabilities, vocational training) or age groups.

Strategy 2-1b: Create a new Federal agency at the Cabinet level, but without line responsibilities, to coordinate efforts related to adolescent health.

A separate office on a level with other Cabinet departments but without line responsibilities (analogous to the Office of National Drug Control Policy) would provide more visibility and coordination across department lines than would a new agency within a single department. However, policies drawn up in such an office might not be accepted by other departments.

Strategy 2-1c: Create a new agency within an existing Cabinet department (e.g., the U.S. De-

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[126] Recently, the Federal Government has been recognizing the cross-condition needs of other population groups. Primary examples include the National Institute on Aging (within the National Institutes of Health of DHHS), the Office of Minority Health (in the Public Health Service of DHHS), and the Office of Women's Health Research (within the National Institutes of Health). These efforts are small, generally research- rather than service-focused, and at least one (by the DHHS Office of Minority Health) was criticized for its lack of initiative (211). Subsequently, Congress authorized separate funding for the Office of Minority Health (Public Law 101-527). Nevertheless, these efforts do represent a recognition that disease-focused activities may not be sufficient to serve the needs of certain groups.

partment of Health and Human Services) to address adolescent health issues.

DHHS currently has the broadest mandate and level of expenditures related to adolescent health issues (see table 2 and figure 13 in "Major Findings"). Thus, DHHS seems a likely place within which to create a new agency with broader responsibility for adolescent health issues. Such an agency could perform many of the functions suggested above. A new agency within DHHS could be situated high enough within the Department to ensure comparability of standing with other DHHS agencies with current major, but disparate, roles in adolescent health issues. Budgets and responsibilities from existing DHHS agencies with major roles in adolescent health issues could be transferred to the new agency. Even so, cooperative efforts within DHHS would still be required because many health and health care issues affecting adolescents require strategies that are disease-specific or that cross population groups (e.g., families, children of all ages, older adolescents and young adults, racial and ethnic minorities, rural people). In addition, strong mandates for collaboration among such a DHHS agency and both independent agencies and agencies in other departments, or possibly the moving of certain of the other agencies' functions (e.g., those of the Office of Juvenile Justice and Delinquency Prevention in the U.S. Department of Justice) to DHHS, could help to ensure a more consistently coordinated adolescent effort.

Strategy 2-1d: Mandate the creation of a strong interdepartmental, interagency adolescent health coordinating body.

Mandating the creation of an interdepartmental, interagency adolescent health coordinating body seems the weakest strategy of the four for strengthening the Federal role in adolescent health. A coordinating body similar to some of those that already exist would have little visibility and no accountability.[127] If the creation of a new adolescent health agency, even within an existing department, is thought to be unworkable, however, Congress and the executive branch might be able to structure the creation and implementation of a coordinating body so that the coordinating body is visible, accountable, and potentially effective in strengthening the Federal role in adolescent health and related issues.

Photo credit: Office of Technology Assessment

Programs to distribute bicycle helmets or other protective equipment to adolescents in economic need are an example of a potentially effective accidental injury prevention strategy.

Even without mandating or encouraging the executive branch to restructure Federal efforts in improving adolescent health, Congress could act to invigorate traditional Federal efforts in program development (see table 6).

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[127] For example, an agency on adolescent research issues was created in 1972 as an offshoot of the Interagency Panel on Early Childhood Research and Development, itself established in 1970 in response to evidence that agencies sometimes "duplicated research and ignored important gaps in research" (258). According to a recent document by the Panel, now known as the Interagency Panel on Research and Development, "For many years the two panels were supported by a central contractor who developed and ran an information system that tracked salient information on each research project funded by member agencies. In addition, special studies were performed on cross-cutting issues that were common to the work performed by the agencies on selected topics of special interest to member agencies as well as reviews of currently funded research." However, the information system and research activities were eventually discontinued. In 1985, the two panels were combined into a single interagency panel on research and development on children and adolescents. Now, the panel's work consists largely of monthly meetings in which information on member activities is presented and suggestions for joint research may be made, and an annual conference in which special topics are addressed in depth. Panel members include representatives of ACTION, and the U.S. Departments of Agriculture, Defense, Education, Health and Human Services, Justice, Labor, State, and Transportation. The panel is chaired by a representative from the Administration on Children, Youth, and Families in the Family Support Administration of DHHS. Other examples of existing and past coordinating bodies with a role in adolescent health can be found in ch. 19, "The Role of Federal Agencies in Adolescent Health," in Vol. III.

Photo credit: Benjamin Smith, Washington, DC

There is little systematic information about effective means of preventing adolescent involvement in violence. Congress could support demonstration projects based on promising models.

Strategy 2-2: Congress Could Encourage the Executive Branch To Invigorate Traditional Federal Activities in Program Development

One of the traditional missions of the Federal Government is to provide leadership in the development of new and innovative programs to improve the health of the population. To invigorate Federal activities in program development related to adolescent health, Congress could encourage the executive branch to support program development or demonstration projects in specific neglected areas of prevention and treatment (Strategy 2-2a). A second approach would be to support demonstration projects that use a comprehensive integrated approach to health education within the framework of health promotion (Strategy 2-2b). This approach would cut across many specific areas in adolescent health promotion and problem prevention (and, to some extent, treatment).

Photo credit: Benjamin Smith, Washington, DC

Very often, adolescents have little control over the food available to them. Congress could support efforts to provide better nutritional choices to adolescents.

Strategy 2-2a: Encourage the executive branch to support program development or demonstration projects in specific neglected areas related to the prevention and treatment of adolescent health problems.

In addition to facing special barriers in access to health services, many adolescents have or are at risk for one or more specific critical health problems. The level of conclusive evidence for "what works" in terms of health promotion, disease prevention, and treatment varies by problem. In some areas (e.g., provision of contraceptive services, mental health services, life-skills training), existing evidence often provides strong indicators of the kinds of promising interventions that deserve additional testing and evaluation. In other areas (e.g., child welfare, homelessness prevention), a considerable amount of additional analysis may be required to determine the kinds of specific approaches that may be effective for prevention and treatment.

Table 7 displays examples of selected programs or approaches that OTA's analysis suggested were either: 1) innovative and promising (e.g., life-skills training for adolescents at risk of alcohol, tobacco, and drug abuse) or 2) in areas that were in serious need of innovative program development and evalu-

Table 7—Promising or Neglected Areas of Adolescent Health Promotion, Problem Prevention, and Treatment: Examples of Program Development Needs[a] [b]

Promising or neglected areas of adolescent health promotion and problem prevention: examples of areas in particular need of program development and accompanying evaluation

- **To improve family environments:**
  - Innovative methods for dissemination to parents of accurate and useful information about adolescent development and appropriate parenting
  - Interventions to help prevent problems in adolescents from single-parent or stepparent families
- **To improve school environments:**
  - Peer tutoring
  - Decentralized decisionmaking
  - Innovative approaches to parental involvement
- **To improve adolescents' use of discretionary time:**
  - Recreational facilities and programs (e.g., pools, gymnasiums, parks)
  - Community service programs
- **To reduce accidental injuries:**
  - Innovative methods for school-based driver education
  - Programs to distribute free protective equipment (e.g., football and bicycle helmets) to adolescents in economic need
- **To improve nutrition and fitness:**
  - Innovative attempts to provide food widely regarded as healthful
  - Education of physical education teachers, coaches, trainers, etc., about adolescent-specific factors that could influence adolescents' physical abilities
  - Nutrition education
- **To improve dental and oral health:**
  - Preventive education on dental and oral hygiene and health, including information about obtaining access to needed services, when needed (e.g., for low-income adolescents)
- **To prevent AIDS and other sexually transmitted diseases:**
  - Condom distribution accompanied by education about the prevention and treatment of human immunodeficiency virus (HIV) and sexually transmitted diseases
  - Education on access to clinical preventive[c] and treatment services
- **To prevent adolescent pregnancy:**
  - Contraceptive distribution accompanied by family life education for adolescents particularly likely to be sexually active (e.g., older adolescents)
  - Sexuality/pregnancy prevention education for young adolescents, before they are likely to be sexually active
  - Parent-child communication groups with a focus on sexuality
  - Broad-based, intensive programs emphasizing life-options discussions and experience plus discussions of sexuality
- **To promote mental health and prevent mental health problems:**
  - Social competency-based mental health promotion efforts
- **To prevent alcohol, tobacco, and drug abuse:**
  - Additional support for life-skills training
- **To prevent delinquency:**
  - Comprehensive, intensive efforts early in life (e.g., Perry Preschool Program, parent-skill training) and after problems have appeared (e.g., intensive psychotherapeutic and vocational-education intervention)
  - Supervised integration of identified antisocial adolescents into activities with nondisturbed peers
  - Violence prevention curricula
  - Victimization prevention curricula
- **To prevent homelessness:**
  - Prevention of abuse in families; treatment services for abusive families
  - Education for families of homosexual adolescents

Adolescent treatment/service delivery: examples of areas in particular need of program development and accompanying evaluation

- **To improve family environments:**
  - Innovative approaches to child welfare services for adolescents
  - Family counseling/therapy, especially for abusive or dysfunctional families
- **To improve services for chronic physical illnesses:**
  - Efforts to reduce fragmentation in delivery of health services to adolescents with serious chronic physical illnesses
  - Efforts to inform adolescents about the availability of treatments for problems of importance to them (e.g., acne, dysmenorrhea)
- **To improve nutrition and fitness:**
  - See "to improve use of adolescents' discretionary time" above regarding providing fitness opportunities
- **To treat AIDS and other sexually transmitted diseases:**
  - Innovative, sensitive, and flexible approaches to treatment for STDs
  - Outreach efforts to bring adolescents into AIDS clinical trials
- **To prevent adverse effects of pregnancy and parenting for adolescents[d]:**
  - Outreach and intensive comprehensive services (e.g., housing, child care, transportation) to keep pregnant and parenting adolescents in school

Table 7—Promising or Neglected Areas of Adolescent Health Promotion, Problem Prevention, and Treatment: Examples of Program Development Needs[a] [b]—Continued

- **To treat mental health problems:**
  - —Information to adolescents about when and how to seek mental health services
  - —Systematic comparisons of processes and outcomes for inpatient v. outpatient treatment
  - —Innovative approaches to case management and financing (e.g., "wraparound" funding)
  - —Innovative mental health treatment approaches, such as home-based and therapeutic foster care, compared to traditional approaches (outpatient therapy, inpatient treatment)
- **To treat alcohol, tobacco, and drug abuse:**
  - —Innovations in access to early intervention (e.g., student assistance programs, school-linked health centers)
  - —Information to adolescents about when and how to seek treatment services
- **To treat delinquent adolescents:**
  - —Innovations in the delivery of health services to adolescents in juvenile justice facilities
  - —Systematic comparisons of outcomes for a broad range of more and less punitive approaches (e.g., private v. public facilities; community-based v. facilities away from the adolescents' home community; open v. closed facilities; "boot camps" v. traditional approaches)
- **To provide services to homeless adolescents:**
  - —Comprehensive (e.g., for physical health, mental health, substance use), intensive services for homeless adolescents
  - —Transitional living

[a] For adolescents, as discussed under "Major Findings," the areas of health promotion, problem prevention, and treatment often overlap.

[b] Note that this is not a comprehensive list of adolescent health problems and solutions, but a list that includes: service systems in dire need of innovative and rigorously evaluated approaches (e.g., the child welfare system); specific interventions that are being widely used but have not been adequately evaluated (e.g., inpatient v. outpatient treatment for mental health problems); interventions that appear promising but have not been widely tested (e.g., violence prevention curricula; distribution of free or low-cost bicycle helmets, paired with an educational campaign); and types of interventions that appear promising but have not been tested with adolescents to OTA's knowledge (e.g., victimization prevention). This list arguably does not include the most important approaches, which are: 1) to develop methods of comprehensively addressing adolescent health issues, within a context of health promotion, rather than splintered efforts to prevent discrete problems, 2) to increase adolescents' access to health services through changes in health financing, and 3) to improve adolescent environments through interventions that are already known to be effective (e.g., fluoridated water).

[c] Clinical preventive services are services that prevent the occurrence (e.g., through contraception) or potential worsening (e.g., through screening for conditions) of clinical conditions.

[d] This Report focused on the prevention of adverse effects of pregnancy for adolescents, although, as discussed in the chapter on families, healthy mothers and fathers are essential to healthy infants and children. An earlier OTA report, *Healthy Children: Investing in the Future*, focused on preventive health services in the prenatal and early infant period to protect the health of young infants and children (224).

SOURCE: Office of Technology Assessment, 1991.

ation (e.g., child welfare, health care in the juvenile justice system). The examples are listed by goal (e.g., "to improve family environments").

Issues—In designing and funding programs and demonstration projects on *specific* issues and service delivery systems, it would be important for executive branch agencies to be mindful of several factors: critical definitional issues regarding adolescent health concerns (box A in "Introduction"); the apparent, but inconstant, interrelatedness of some adolescent health problems (165); the fact that interventions can have multiple intended outcomes; the low base rate of some high-visibility problems; and the "partially inconsistent assumptions about evaluation" made by the variety of disciplines involved in adolescent health intervention (41). One approach to these issues is adequately to conceptualize and measure the problem, the intervention, and the possible outcomes.

Strategy 2-2b: Provide support for multisite rigorous research and demonstration projects that test and compare suggested new comprehensive and innovative models of education for health such as those suggested recently by the Carnegie Council on Adolescent Development, the National Commission on the Role of the School and the Community in Improving Adolescent Health, and the Centers for Disease Control.

Another approach to program development in health promotion and problem prevention is to take a more broad-based approach to school-based educational approaches to adolescent health. In the United States, there is little in-depth understanding about the way health education is delivered to adolescents,[128] but concerns have eventuated in a consensus that changes in the delivery of health education are needed. In recognition that most contemporary health education efforts are neither appropriate for adolescents nor effective, a task force of the Carnegie Council on Adolescent Development, the National Commission, and the Centers for Disease Control have recently generated suggestions for change (29,153,279). Their recommendations regarding school-based health education are presented in box C in "Major Findings."

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[128] See, for example, ch. 10, "Pregnancy and Parenting: Prevention and Services," in Vol. II.

Common themes in these groups' recent recommendations include the need for health-related education to begin early, be developmentally appropriate, involve life-skills training, involve the active participation of adolescents, and be part of a general approach to health that includes improved access to health services (29,153,279). Some have felt the need to recommend explicitly that information be honest and relevant (153). Others suggest that health education be part of an integrated life-sciences curriculum and, more importantly, that health education be integrated into overall school environments that are health-promoting (29). OTA's analysis suggests another consideration: that education for health include information about gaining access to health services, even if such services are not school-linked. And OTA's Adolescent Health Youth Advisory Panel expressed an interest in health education that was immediately relevant to what they view as one important aspect of their lives: interpersonal relations (235). The Youth Advisory Panel's concern is consistent with societal interest in reducing adolescent pregnancy, interpersonal violence, and, potentially, the high divorce rate among adults (292,293).[129] While these recommendations seem eminently logical, there is still some inconsistency among them, and none of them have been tested systematically.

Issues—It is important to note that existing recommendations on health education are limited to school-based health education. There are no attempts known to OTA to conceptualize a method of providing comprehensive health education for adolescents who are not in school.[130]

A second issue is that school-based prevention efforts could continue to tend to be didactic and relatively passive rather than proactive. Proactive efforts are those that attempt to promote health and prevent the occurrence of problems by changing environments rather than merely attempting to change individual behavior.[131] By integrating health education efforts into the school and community environments (including, if available, comprehensive health and related services), the danger of limiting health education to "lectures" on the "four food groups" (151) can be avoided. Were health education to be well-integrated into a total school and community environment, however, evaluation of the effectiveness of any particular component is made more difficult.

A fourth issue in attempting to provide quality health education in the schools is the frequent political divisiveness encountered when the discussion of morally difficult issues with minors is proposed.

Further conceptualization and testing of multiple components of an integrated approach is clearly needed, but an often effective approach to implementing improvements is to make theoretically reasonable changes and carefully observe the effects of those changes (117).

Strategy 2-3: Congress Could Encourage the Executive Branch To Invigorate Traditional Federal Activities in Research on Adolescent Development

This Report and other recent documents specifically focused on either adolescent development and health (62,95,340) or on the Federal role in financing research on the topic of adolescent development and health (144) are unanimous in concluding that Federal efforts in research related to adolescent development and health have been and continue to be dismally inadequate and shortsighted.

As mentioned previously, overall Federal research expenditures on adolescent development and health are small, focused on a relatively narrow spectrum of problems, and fixed on an even narrower set of solutions. Although the problems typically emphasized may be costly and important, with potentially disastrous implications for adolescents' futures (e.g., serious delinquency, unprotected pregnancy and parenthood), there is little indication in current Federal policy and programs of concern for the context and entirety of adolescents' lives, a situation that has left informed observers perennially disappointed with the Federal role in improving adolescents' lives and health.

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[129] The 1988 DHHS National Survey of Family Growth found that more than one-third of first marriages among women ages 15 to 44 had already ended in separation, divorce, or widowhood, and among women who had been married for the first time in 1974 or earlier, the proportion of disrupted first marriages approached half (293). Also see ch. 3, "Parents' and Families' Influence on Adolescent Health," in Vol. II.

[130] The Centers for Disease Control in DHHS is charged with developing human immunodeficiency virus (HIV)-related education prevention for out-of-school youth. For discussion, see ch. 9, "AIDS and Other Sexually Transmitted Diseases: Prevention and Services," in Vol. II.

[131] Selected major strategies for improving adolescents' environments are discussed below under Major Option 3 ("Congress could take steps to improve environments for adolescents").

Congress could help to substantially revitalize the research agenda related to adolescent development and health. Research on adolescent health and development issues should be approached in a consistent, comprehensive, coordinated, sensitive, and supportive manner. To oversee the development of a research agenda, Congress could require that the executive branch establish a permanent council or councils to provide ongoing advice to Federal agencies on research directions in adolescent health (Strategy 2-3a). Alternatively, or in addition, Congress could support a symposium or symposia on adolescent research issues (Strategy 2-3b).

Strategy 2-3a: Require the executive branch to establish a permanent council or councils to provide ongoing advice to Federal agencies on research directions in adolescent health.[132]

A permanent council or councils would provide executive branch agencies the benefit of advice on adolescent health and development issues from leading practitioners in the field. This strategy is a relatively low-cost way to potentially raise the level of federally funded adolescent development and health research and would probably have beneficial repercussions for non-federally funded research.

One hazard to avoid in establishing a Federal advisory board or boards is domination by a single professional discipline. In addition, strong adolescent participation in the symposia or advisory councils and explicit attention to reconceptualizations of adolescent health issues (e.g., in a symposium designed for that purpose) would help to ameliorate any tendencies to remain in the traditional frameworks.

Alternatively, or in addition to the permanent advisory council or councils:

Strategy 2-3b: Support, or encourage the executive branch to support, a symposium or symposia on adolescent research issues.

Such symposia could address the development of research agendas in normal adolescent development, risk and protective factors in adolescent health and well-being, health promotion and disease prevention, treatment services, and nontraditional strategies for improving adolescent health and well-being. They could help to energize the research community and stimulate cross-fertilization of ideas.

Photo credit: Benjamin Smith, Washington, DC

Congress could encourage the U.S. executive branch to strengthen traditional Federal activities in research on adolescent development and health. One strategy would be to require the establishment of a permanent advisory council or councils to advise Federal agencies on research directions; another would be to support a symposium or symposia on adolescent research issues. Advice from a range of disciplines and from adolescents would be helpful.

Analyses in OTA's Report, and in other recent volumes on adolescent development, health, and health services (8,51,62,93,102,153,340), can help to provide the groundwork for an improved approach to adolescent health research.

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[132] This council or councils could be similar to those currently advising the National Cancer Institute (within the National Institutes of Health of DHHS) and the National Institute of Mental Health (within the Alcohol, Drug Abuse, and Mental Health Administration of DHHS).

If implemented in addition to a permanent advisory council or councils, these symposia could be guided by, and work in tandem with, the advisory council(s). Adolescent participation could be encouraged in the symposia as well as in the advisory boards.

Strategy 2-4: Congress Could Encourage the U.S. Executive Branch To Invigorate Traditional Federal Activities in Data Collection

National and local information on adolescent health, health problems, and health services is typically unavailable or deficient.[133] Data for monitoring adolescent health status, health and related services utilization, and barriers to access are currently insufficient in terms of topics covered, ages reported on, and ability to disaggregate data for specific racial, ethnic, income, gender, age, regional, and residential groups.

To encourage the collection and dissemination of data on adolescent health, Congress could require periodic reports to Congress on the health status of U.S. adolescents (Strategy 2-4a) and support local efforts to collect adolescent health information comparable to national level data (Strategy 2-4b).

Strategy 2-4a: Require the appropriate U.S. executive branch agency[134] to provide Congress with periodic (e.g., every 2 years) reports on the health status of U.S. adolescents and require that these reports be made available to the public.

The reports should include information on the following:

- a comprehensive range of health status measures (e.g., self-reported risk and protective behaviors, self-perceived emotional status, self-perceived physical health problems);
- utilization of the range of health services providers and settings likely to be seen by adolescents (e.g., guidance counselors, school nurses, teachers (for counseling and guidance), coaches, mentors, adolescent and adult friends, psychologists, nurses outside the school, social workers, nutritionists, and physicians, in schools, urgent/emergency care centers, hospitals, youth serving agencies, sports facilities, workplaces, and private offices);

Photo credit: Mark Charette, Washington, DC

Congress could require the appropriate U.S. executive branch agency to provide Congress with periodic reports on a comprehensive range of adolescent health status and health and related services indicators. Such a requirement would promote the collection of appropriate information.

- availability and utilization of recreational facilities and outlets;
- volunteer and paid work activities; and
- other environmental risk and protective factors (e.g., family structure, abuse, neglect).

Congress could frame the request in such a way that health-related findings for specific age, gender, racial, ethnic, income, regional, and residential groups are highlighted. This would force the eventual collection of appropriate data.

Issues—Clearly, the U.S. executive branch is not *currently* equipped to regularly provide Congress with adolescent related-reports of this broad nature (260; see app. C). Requiring such reports, however, would compel the executive branch to begin compiling such data as are available and to determine the kinds of data not currently available.

A second issue is that national data, while useful in suggesting broad trends in adolescent health and access to health and health services, are certainly not sufficient guides for use in local practice. The provision of services to adolescents, although it can be assisted by support from the Federal Government, is ultimately a local issue. In addition, some Federal grant programs relevant to adolescent health issues are based at least in part on the demonstration of need in the local community. Answers to questions such as which adolescents are using alcohol, tobacco, and illicit drugs; how many (and which) adolescents have mental disorders; how many (and which) adolescents use or need contraception, become pregnant, or are parents can serve as a guide to the placement of resources. To assist local communities with their planning, and potentially make the Federal grantmaking process more equitable, Congress could consider the following strategy.

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[133] See app. C, "Issues Related to the Lack of Information About Adolescent Health and Health and Related Services."

[134] A central Federal locus for adolescent health issues would provide an appropriate organizational setting through which to collect and disseminate such data (see Major Option 2, Strategy 2-1 on creating a locus for a strong Federal role in addressing adolescent health issues).

Strategy 2-4b: Support and encourage local efforts to collect adolescent health information that will be, at least in part, able to be compared to national level data.[135]

There are several potential barriers to expansions in the collection and analysis of information pertinent to adolescent health, both at the national and local levels. First, data collection is expensive and would almost certainly require additional budgetary support.[136]

Second, questionnaires relying on self-reports are the most common means of collecting information on adolescent health status and health utilization, perhaps because they are among the least expensive alternatives. However, there is considerable concern about the reliability and validity of self-report data. This may be particularly true for: 1) adolescents, who as a group may be more likely than other age groups to respond in a socially desirable, rather than an objectively true, manner (42,85); and 2) for tracking trend data in those behaviors that vary over time in social acceptability (e.g., sex, contraceptive use, drug use). Alternative means of collecting data from adolescents, or making concerted efforts to verify information amassed through self-reports, will be necessary.

Third, certain topics (e.g., suicide, drug use, sexual activity) are considered quite delicate. For economic reasons (e.g., real estate values, school enrollments), local jurisdictions and specific schools may be reluctant to collect data suggesting that adolescents in their communities are troubled or engaged in behaviors that may meet with social disapproval. Also, there is typically some concern that adolescents may be troubled by the asking of some questions or actually driven to engage in certain behaviors through the power of suggestion. There is no hard evidence to support that the raising of an issue in a questionnaire leads to engagement in

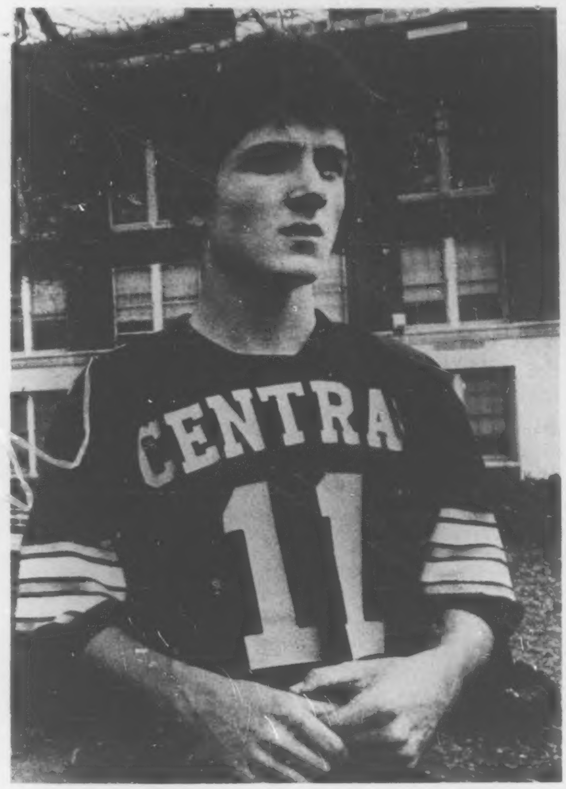

Photo credit: Education Week

Congress could support and encourage efforts to collect local data that will be able, at least in part, to be compared to national data.

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[135] For example, the Youth Risk Behavioral Survey, which was being designed by a steering committee supported by Centers for Disease Control in DHHS, will be administered at the National, State, and local levels. Certain core items will be constant across localities, and localities will have the option to add specific items of particular importance. In this way, a core of information will be available nationally, and localities will have information of importance to them as well as national comparative data (277). Similarly, the Young Americans Act called for States wishing to apply for formula grants for the purpose of improving the coordination of services provided to children, youth, and families, to prepare reports with detailed information gathered by the State on young individuals and the families of such individuals concerning: 1) age, sex, race, and ethnicity; 2) residences; 3) incidence of homelessness; 4) composition of families; 5) economic situations; 6) incidence of poverty; 7) experiences in care away from home; 8) health; 9) violence in homes or communities; 10) nature of their attachment to school and work; 11) dropout rates; 12) character of the communities in which they reside (Public Law 101-501, Title IX, Subtitle A, Chapter 2, Sec. 931).

[136] In addition, it may require training for additional researchers trained to work with adolescent respondents.

a proscribed or dangerous behavior,[137] but these concerns may be a function in part of communities not knowing how to proceed when they do find they have a problem. Therefore, it is important that local data be allowed to be collected anonymously if need be (so that individuals, individual schools, and perhaps individual communities are not able to be identified) and that they not be collected in isolation from other efforts designed to deal with adolescent health concerns.[138]

Strategy 2-5: Congress Could Create a Locus for a Strong Federal Role in Addressing Adolescent Health Issues and Invigorate Traditional Federal Activities in Program Development, Research, and Data Collection

Restructuring Federal adolescent health efforts so that there is a more central locus for coordination would not by itself address current deficiencies in the traditional Federal activities related to program development, research, and data collection. Thus, a more ambitious, and potentially effective, approach would be to *combine* Strategies 2-1 through 2-4.

Major Option 3: Congress Could Support Efforts To Improve Adolescents' Environments

The Nation's approach to addressing the health problems of adolescents is often skewed toward efforts designed to convince adolescents to change their own behavior. Teaching adolescents to behave in ways that are socially acceptable, life-prolonging, and otherwise health promoting is, of course, important. But in the Nation's realization that behavior affects health (e.g., 260), the importance of the social environment[139] in influencing behavior and otherwise contributing to health and health problems has been neglected (230).

To illustrate this point consider the DHHS report, *Healthy People 2000*. *Healthy People 2000* is the Nation's most prominent statement on health objectives for the U.S. population and has numerous health status and risk reduction goals related to children, adolescents, and young adults (260).[140] By comparison, the report sets forth relatively few goals for ''services and protection'' that are specific to adolescents. Box D presents year 2000 ''service and protection'' objectives related to adolescents.[141]

Major Option 1 (encouraging efforts to improve adolescents' access to health services) and Major Option 2 (taking steps to restructure and invigorate the Federal Government's efforts to improve adolescents' health) are consonant with a ''new approach'' to adolescent health concerns, in which adolescents are provided with a prolonged protective and supportive environment and, it is hoped, adolescents come to perceive that they are appropriately cared for. Major Option 3 (supporting efforts to improve environments for adolescents) requires strategies outside of areas traditionally regarded as health services (see table 8); they are designed to improve

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[137] A possible exception are the findings from some suicide prevention research studies that mass-oriented suicide prevention ''interventions'' (e.g., the showing of films about adolescent suicide on television) have resulted in a small, but statistically significant, increase in adolescent suicide (see ch. 11, ''Mental Health Problems: Prevention and Services,'' in Vol. II) However, these were films and not questionnaires.

[138] For example, the National Commission on the Role of the School and the Community in Improving Adolescent Health recommended that communities establish coordinating councils for children, youth, and families that develop local solutions to local problems (153).

[139] The physical environment is also important, but this Report focused on the social environment. Other reports by OTA have focused on potential health effects of the physical environment, although they have not focused specifically on adolescents. See for example: *Catching Our Breath: Next Steps for Reducing Urban Ozone* (227); *Technologies for Reducing Dioxin in the Manufacture of Bleached Wood Pulp* (226); *Acid Rain and Transported Air Pollutants: Implications for Public Policy* (222); *Neurotoxicity: Identifying and Controlling Poisons of the Nervous System* (231) and *Complex Cleanup: The Environmental Legacy of Nuclear Weapons Production* (234).

[140] The *Healthy People 2000* report identified 32 ''health status'' and ''risk reduction'' goals for adolescents and young adults, and 34 such goals for children (260). A *health status goal* is defined in terms of a reduction in death, disease, or disability (e.g., ''Reduce deaths among youth aged 15 through 24 caused by motor vehicle crashes to no more than 33 per 100,000 people'' (Healthy People Objective Number 9.3b)). A *risk reduction goal* is defined in terms of prevalence of risks to health or behaviors known to reduce such risks (e.g., ''Increase use of helmets to at least 80 percent of motorcyclists and at least 50 percent of bicyclists'' (Healthy People Objective Number 9.13)). It is important to note that DHHS notes that the report *Healthy People 2000*, although published by DHHS, ''does not reflect the policies or opinions of any one organization, including the Federal Government, or any one individual'' (260). It is viewed by DHHS as ''the product of a national process'' (260). However, in transmitting the report to the Secretary of DHHS, the Assistant Secretary for Health committed the Public Health Service ''to work toward achievement of these objectives [contained in *Healthy People 2000*] for the coming decade'' (260).

[141] The American Medical Association's ''Healthier Youth by the Year 2000 Project'' publication, *Healthy Youth 2000*, provides a fuller accounting of the *Healthy People 2000*'s national health promotion and disease prevention objectives applicable to adolescents (defined by the American Medical Association project as ages 10 through 24) (6). The American Medical Association publication excerpted objectives from the DHHS publication *Healthy People 2000* (260) pertaining to all or part of the age group 10 to 24. In addition, the American Medical Association publication includes ''Additional Objectives'' culled from *Healthy People 2000*, organized according to roles for ''professionals in health care, education, community, and government contexts'' (6).

Box D—Healthy People 2000 Service and Protection Objectives That Pertain to Adolescents

Healthy People 2000 is the Nation's most prominent statement on health objectives for the U.S. population. This report, published by the U.S. Department of Health and Human Services (DHHS) in 1990, contained a number of health status and risk reduction goals for adolescents but relatively few service and protection objectives related to adolescents. Preventive *services* include counseling, screening, immunization, or chemoprophylactic interventions for individuals in clinical settings, and health *protection* objectives are those environmental or regulatory measures that confer protection on large population groups. In its lists of objectives by age group, DHHS combined services and protection objectives.

Some year 2000 service and protection objectives identified by DHHS as related to adolescents[1] would not require changes in adolescents' behavior, among them the following:

- increasing the proportion of school lunch and breakfast services and child care food services with more nutritious menus;
- increasing the number of State and local tobacco-free indoor air laws;
- eliminating or severely restricting tobacco product advertising and promotion to which youth are likely to be exposed;
- increasing the number of State laws to restrict minors' access to alcohol;
- increasing restrictions on promotion of alcohol to young audiences;
- extending emergency room protocols for identification of suicide attempters, victims of sexual assault, and child abuse victims;
- removing financial barriers to immunizations; and
- increasing the proportion of primary care providers who provide age-appropriate preconception care and counseling.

Other service and protection goals targeted to adolescents would require changes in adolescent behavior, among them:

- increasing the proportion of children and adolescents who participate in daily school physical education;
- increasing the proportion of school physical education class time that students spend being physically active; and
- increasing the proportion of 10- to 18-year-olds who have discussed sexuality with their parents and/or received sexuality information through a parentally endorsed source.

A number of service and protection objectives were not identified by DHHS as targeting adolescents but could potentially affect adolescents, among them:

- increasing the availability and accessibility in the community of physical activity and fitness facilities;
- increasing by 100 percent the availability of processed food products that are reduced in fat and saturated fat;
- increasing the proportion of restaurants and institutional food service operations that offering identifiable low-fat, low-calorie food choices;
- ensure access to alcohol and drug treatment programs for traditionally underserved people;
- increasing driver's license suspension/revocation laws or programs of equal effectiveness for people determined to have been driving under the influence of intoxicants;
- increasing the proportion of pregnancy counselors who offer positive, accurate information about adoption to their unmarried patients with unintended pregnancies;
- increasing services for human immunodeficiency virus (HIV) infection and sexually transmitted diseases (STDs);
- increasing the proportion of providers of primary care for children who include assessment of cognitive, emotional, and parent-child functioning, with appropriate counseling, referral, and followup, in their clinical practices;

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[1] The health promotion and disease prevention objectives are organized initially by strategy (e.g., health promotion, health protection, preventive services, and surveillance and data systems), not by population group (260). Then, a separate section of the *Healthy People 2000* report lists the objectives as they pertain to certain age groups (i.e., children, adolescents and young adults, adults, and older adults) and "special" populations (i.e., people with low income, blacks, Hispanics, Asians and Pacific Islanders, American Indians and Native Americans, and people with disabilities).

Continued on next page

Box D—Healthy People 2000 Service and Protection Objectives That Pertain to Adolescents—Continued

- increasing the number of States in which at least 50 percent of children identified as physically or sexually abused receive physical and mental health evaluation with appropriate followup;
- increasing the number of States requiring safety belt and motorcycle helmet use for all ages;
- enacting laws requiring that handguns be made more difficult to discharge by children;
- extending to 50 States emergency medical services and trauma systems linking prehospital, hospital, and rehabilitation services;
- performing testing for lead-based paint in homes built before 1950;
- extending to all long-term institutional facilities (including juvenile homes and detention facilities) the requirement that oral examinations and services be provided no later than 90 days after entry into these facilities; and
- extending requirement of the use of effective head, face, eye, and mouth protection to all organizations sponsoring sporting and recreation events that pose risk of injury.

SOURCE: Office of Technology Assessment, 1991, based on U.S. Department of Health and Human Services, Public Health Service, *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*, conference edition (Washington, DC: September 1990).

the social environment for adolescents, with the goals of promoting health and protecting adolescents from adverse environments.

One strategy would be for Congress to take steps to increase support to families so that they can play their rightful and important role in adolescents' development and health (Strategy 3-1). Another strategy would be for Congress to take steps to reduce the adolescent death and injury toll from firearms by reducing adolescents' access to firearms (Strategy 3-2). A third strategy would be for Congress to support the expansion of health-promoting recreational opportunities for adolescents (Strategy 3-3). A fourth strategy would be for Congress to monitor the effect on adolescents of the recently passed National and Community Service Act (Public Law 101-610) (Strategy 3-4).

Strategy 3-1: Congress Could Take Steps To Increase Support to Families of Adolescents

Appropriate roles for parents change during adolescence, but changing relationships between adolescents and parents should not obscure the fact that parents remain essential to healthy adolescent development.[142] Unfortunately, many current policies provide little support for parents to take an active and appropriate role in the lives of their adolescent children.[143] A recent review found that, of the four parental functions important for the socialization, development, and well-being of adolescents (providing basic needs, protection, guidance, and advocacy), existing parental support programs were most likely to emphasize the guidance function, and none addressed the basic resource provision function of parents (192). Only a handful of parental support programs addressed the personal or developmental needs of adults who are raising adolescent children (192). Further, OTA has observed that much of the theorizing and planning

Photo credit: Capitol Hill Arts Workshop, Washington, DC

Many current policies provide little support for parents to take an active and appropriate role in the lives of their adolescent children.

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[142] See ch. 3, "Parents' and Families' Influence on Adolescent Health," in Vol. II.

[143] For example, schools have not adjusted their policies to the fact that both (or the single) parents of 60 percent of adolescents work full time.

Table 8—Strategies for Major Option 3: Congress Could Support Efforts To Improve Adolescents' Environments

Strategy	Policy issue addressed	Time for expected impact	Rough estimate of cost (direct) to Federal Government
Strategy 3-1: Congress could take steps to increase support to families of adolescents.	Parents are legally responsible for their adolescents, are often needed to accompany adolescents for the receipt of health services, and play an essential role in adolescents' optimal development.	Depends on strategy adopted	Low to medium, depending on strategy
Strategy 3-2: Congress could take steps to support additional limitations on adolescents' access to firearms.			
3-2a: Act to place additional limitations on adolescents' access to firearms.	Suicide, infliction of injury and death by adolescents.	Medium term	Low
3-2b: Fund a study to determine how to further restrict adolescents' access to firearms.	Suicide, infliction of injury and death by adolescents.	Longer term	Medium
Strategy 3-3: Congress could support the expansion of appropriate recreational opportunities for adolescents.	Appropriate use of discretionary time; potential for adult guidance; possible reduction of subjective distress; opportunities for learning life-skills and social competence; opportunities for work (community service); possible reduction in substance abuse, especially among disadvantaged adolescents.	Medium to longer term	Depends on Federal contribution
Strategy 3-4: Congress could monitor the effects on adolescents of the implementation of the National and Community Service Act of 1990.	Appropriate use of discretionary time; adult guidance; improved sense of citizenship. Would help to ensure that the "quantifiable measurable goals" to be included in local grant applications are stated and measured for adolescents, including the economically and educationally disadvantaged youths targeted in the legislation; and would thus give a sense of how well adolescents are addressed in the implementation of the legislation.	Immediate	Low

SOURCE: Office of Technology Assessment, 1991.

about the role of the family and family support has focused on the needs of younger children.[145]

Congress could take concrete steps to enhance the abilities of parents to provide for the basic needs of their adolescent children (e.g., through child allowances, tax credits, additional support for postsecondary education, and child care appropriate for adolescents[146]). In addition, Congress could take steps to enhance the availability of parents to be involved in the lives of their adolescent children (e.g., by promoting flexible worktime so that parents can be home after school, attend teacher conferences, and participate in school activities).

The changing developmental status of individuals during adolescence means that direct application of the kinds of family support features proposed or enacted for families with younger children would not be appropriate for families with adolescents. In general, the design of appropriate family support policies for families with adolescents might be preceded by an analysis of the practices of other developed countries and should seek the participation and advice of adolescents and their families.

In addition to concrete support, a clear need for many parents is for accurate information about the challenges of parenting adolescents. The need to develop innovative methods to disseminate information about appropriate parenting strategies during adolescence was noted earlier (see Major Option 2, Strategy 2-2a and table 7, above). Because the knowledge base on appropriate parenting is still slender with respect to nonwhite, non-middle-class, and nonurban families (192), it would be important to accompany such information dissemination with training and evaluation, as well as to expand the research base on how appropriate parenting of adolescents may differ for lower socioeconomic and/or racial and ethnic minority adolescents, and those in rural areas.

Strategy 3-2: Congress Could Take Steps To Support Additional Limitations on Adolescents' Access to Firearms

Access to firearms for persons of all ages is one of the most hotly debated issues in the United States (214). It seems universally agreed, however, that it is unwise for minors to have unlimited access to firearms. Despite this recognition, and associated Federal legal limits on the *sale* (but not possession) of firearms to minors,[147] U.S. adolescents do have access to firearms, which they use for destructive purposes (e.g., suicide, homicide, other violence) or to harmful ends (e.g., accidental injuries).[148] In addition, adolescents are increasingly the victims of firearm-related homicides committed by persons of all ages.[149]

Much needs to be determined about how adolescents gain access to firearms, particularly those firearms that are used without parents' knowledge and for illegitimate purposes (e.g., see 336).[150] Nonetheless, international comparisons of youth homicide rates, and data about the level of access to firearms by U.S. adolescents, suggest that one or both of the following strategies may be warranted.

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[145] For example, the Family and Medical Leave Act, which was passed by the 101st Congress but vetoed by the President and not overridden by the Congress (H.R. 770), applied primarily to family leave for newborn or adopted children, although it would have covered unpaid family leave for seriously ill children.

[146] Strategies for recreational and youth service opportunities that are appropriately overseen by adults (Strategies 3-3 and 3-4 below) are relevant to child care for adolescents.

[147] Some State laws also limit the ownership, purchase, and possession of guns by minors. The laws vary widely by State.

[148] See ch. 5, "Accidental Injuries: Prevention and Services"; ch. 11, "Mental Health Problems: Prevention and Services"; ch. 13, "Delinquency: Prevention and Services," in Vol. II.

[149] See ch. 13, "Delinquency: Prevention and Services," in Vol. II.

[150] For example, *Healthy People 2000* gave as goals for reducing violent and abusive behavior 20 percent reductions in: 1) the proportion of weapons (i.e., not limited to guns) that are inappropriately stored and therefore dangerously available, and 2) the incidence of weapon-carrying by adolescents aged 14 through 17 (260). DHHS noted, however, that baseline data for the first objective would not be available until 1991, and for the second objective, 1992 (260). (The only apparent objective specific to firearms was a "services and protection" goal related to unintentional injuries (not violent and abusive behavior) that, by the year 2000, 50 States would have laws "requiring that new handguns be designed to minimize the likelihood of discharge by children" (260).)

The National Adolescent Student Health Survey asked only limited questions about adolescents' access to firearms (10). Even data about the causes of injuries from hospital emergency rooms are limited (see ch. 5, "Accidental Injuries: Prevention and Services," in Vol. II). The U.S. Consumer Product Safety Commission collects information about adolescents' emergency room visits associated with numerous consumer products, but not about emergency room visits related to guns (see ch. 5, "Accidental Injuries: Prevention and Services," in Vol. II). Wright and Rossi noted in their book summarizing their survey of weapons acquisition among convicted felons doing time in State prisons that "some of the most important questions [on weapons, crime, and violence in America] have. . .barely been researched" (336). Among these important questions they included "the question of how, where, and why criminals acquire, carry, and use firearms." Their own survey could not answer this question regarding juvenile offenders because relatively few juvenile offenders were serving time in the State prisons for violent offenders that cooperated with the Wright and Rossi research project (336).

Strategy 3-2a: Act to place additional limitations on adolescents' access to firearms.

Strategy 3-2b: Fund a study to determine how to further restrict adolescents' access to firearms.

Analysis of specific actions that Congress (and others) could take to specifically limit adolescents' access to firearms would require analysis beyond that which was possible in this Report (e.g., an in-depth analysis of the ways in which adolescents legally and illegally gain access to firearms; legal issues in limiting access).[151]

Because the sale of firearms to adolescents is already illegal under Federal law, it can be assumed that many adolescents obtain access to firearms purchased by adults. Placing further limitations on adolescents' access may affect adults' access to firearms, and efforts to limit adult access to firearms raise constitutional issues and are politically contentious (see, e.g., 214). Half of U.S. adults polled report that they own at least one gun, and half keep guns in their homes (217). Further, the issue of whether the availability of guns is a major or substantial factor in the violent crime rate[152] (or in adolescent suicide[153]) has not been settled to everyone's satisfaction (214). Steps that could limit adolescents' access to firearms, while not unduly affecting adult access,[154] include requirements for adults with firearms to keep firearms securely away from adolescents (and younger children) (e.g., locked up in the home, or, for firearms used only for hunting, locked up in a community facility), penalties for adults whose adolescent dependents are harmed by firearms, and training and licensing requirements for adolescent use of firearms (e.g., for hunting). Adults, as well as adolescents, need to be educated that ammunition should be stored in a location separate from guns.

Strategy 3-3: Congress Could Support the Expansion of Appropriate Recreational Opportunities for Adolescents

Adolescents need health-promoting recreational opportunities. Although no national survey has been conducted on the kinds of recreational opportunities adolescents would like to have, reasonable options for recreation include swimming pools, running tracks, basketball courts, ball fields, gymnasiums, billiards, ping pong, other indoor sports, music, dances, and a place to socialize.[155]

Federal support could be provided through seed moneys or matching grants to local recreation departments and private organizations that can demonstrate a strategy appropriate for adolescents, including adolescent participation and sufficiently trained adult supervision.

On the face of it, increasing recreational outlets for adolescents may seem costly. On the one hand, supporting additional recreational outlets may rarely involve the construction of new buildings.[156] Rather, available facilities such as school buildings could be adapted to be compatible with the needs of adolescents (e.g., remain open at appropriate hours and

Photo credit: Katherine Criss, New York, NY

Adolescents need health-promoting recreational facilities and activities ranging from swimming pools, gymnasiums, and ball fields to dances and other social activities.

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[151] OTA is currently developing a background paper on automatic firearm purchaser checks.

[152] See ch. 13, "Delinquency: Prevention and Services," in Vol. II.

[153] See ch. 11, "Mental Health Problems: Prevention and Services," in Vol. II.

[154] OTA did not assess the wisdom of or potential health effects of universal gun control (i.e., for all ages).

[155] The DHHS publication *Healthy People 2000* recommended increases in community availability and accessibility of physical activity and fitness facilities (hiking, biking, and fitness trails; public swimming pools; acres of park and recreation open space) in order to improve the physical fitness of U.S. citizens (Objective 1.11) (260). Data on facility availability per 1,000 population cited in *Healthy People 2000* were not adolescent-specific.

[156] Some communities, however, may not have adequate facilities.

install appropriate equipment). On the other hand, such adaptations, and requirements for appropriate adult supervision, may involve upfront and continuing costs (e.g., training, continuing education).

Strategy 3-4: Congress Could Monitor the Effects on Adolescents of the Implementation of the National and Community Service Act of 1990

As described in this Report,[157] the 101st Congress passed a 1990 law designed to enhance opportunities for national and community service for all U.S. citizens, particularly the disadvantaged. In presenting the rationale for the legislation, the senatorial authors of the legislation argued in part that (S.1430, 101st Congress, 2d session):

> (1) service to the community and the Nation is a responsibility of all citizens of the United States, regardless of the economic level or age of such citizens;
>
> (2) citizens of the United States who become engaged in service at a young age will better understand the responsibilities of citizenship and continue to serve the community into adulthood;
>
> (3) serving others builds self-esteem and teaches teamwork, decision making, and problem-solving;
>
> (4) the 70,000,000 youth of the United States who are between the ages of 5 and 25 offer a powerful and largely untapped resource for community service;
>
> (5) conservation corps and human service corps provide important benefits to participants and to the community;
>
> (6) the Volunteers in Service to America Program is one of the most cost effective means of fighting poverty in the United States. . .

Photo credit: Youth Services of America, Washington, DC

It is likely that adolescents who serve others can build self-esteem and learn teamwork, decisionmaking, and problem solving.

Many of the activities and program requirements authorized by the National and Community Service Act of 1990 are particularly relevant to adolescents,[158] including economically and educationally disadvantaged adolescents.[159] The legislation also requires that quantifiably measurable goals be included in local grant applications (S.1430, Title I, Subtitle B, Sec. 114(a)(2)(C)). While the total amounts authorized for programs with a considerable emphasis on adolescents are not very large,[160] the legislation does begin to address many of the concerns about adolescent rolelessness and preparation for the future expressed by numerous observers

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[157] See ch. 4, "Schools and Discretionary Time," in Vol. II.

[158] Ages or other relevant age-related characteristics were included the School and Community Based Service portion (Title I, Subtitle B), for elementary and secondary school students and out-of-school youth; the American Conservation and Youth Corps (Title I, Subtitle C), for 15- to 25-year-olds; and the National and Community Service Program (Title I, Subtitle D), for ages 17 and older. Youth Community Service programs are required to include an age-appropriate learning component.

[159] "To be eligible to receive a grant [under Title I, Subtitle B, School and Community Based Service] a State. . .shall prepare and submit, to the Commission [on National and Community Service, established under section 190 of the act], an application. . .including a description of the manner in which. . .economically and educationally disadvantaged youths, including individuals with disabilities, youth with limited basic skills or learning disabilities, and youth who are in foster care, are assured of service opportunities" (S. 1430, Title I, Subtitle B, Sec. 113).

[160] For example, the following amounts were authorized to be appropriated for fiscal year 1991: $10 million for the School and Community Based Service provision; $14 million for the American Conservation and Youth Corps; and $14 million for National and Community Service. Fifty percent increases for each program were authorized to be appropriated for fiscal year 1992.

(160, 330). It is too early to judge the effectiveness of the legislation in improving the lives of adolescents, but Congress could encourage the Commission on National and Community Service (also established by Public Law 101-610), to evaluate systematically the impact on adolescents in the Commission's Report to Congress.

Summary of Major Policy Options

In conclusion, three major policy options suggest themselves as a result of OTA's analysis of adolescent health:

1. Congress could adopt strategies **to improve adolescents' access to appropriate health and related services;**
2. Congress could adopt strategies **to restructure and invigorate the Federal Government's efforts to improve adolescents' health;** and
3. Congress could adopt strategies **to improve environments for adolescents.**

It is important to note, however, that apart from whatever specific strategies the Federal Government may adopt to improve adolescents' health, **there is a need for a basic change in approach to adolescent health issues in this country.** Even if all the specific policy changes suggested by OTA's analysis were to be implemented without a basic change in approach, the whole would be less than the potential sum of the parts. Instead, both the major options and the specific options (discussed below) were developed using a basic guiding principle, which should not be forgotten as specific changes are considered and, perhaps, implemented. That basic guiding principle is that a more sympathetic and supportive approach to adolescents is needed. This approach could follow the model of authoritative parenting, which combines warmth, democracy, and demandingness in a prolonged protective environment.

Specific Findings and Policy Options

This section discusses specific findings and additional policy options related to topics addressed in particular chapters of OTA's adolescent health Report:

- the conceptualization of adolescent health (ch. 2),
- parents' and families' influence on adolescent health (ch. 3),
- schools and discretionary time (ch. 4),
- prevention and services related to selected adolescent health concerns (chs. 5 through 14),
- the delivery of primary and comprehensive health services to adolescents (ch. 15),
- adolescents' financial access to health services (ch. 16),
- adolescents' legal access to health services (ch. 17),
- issues in the delivery of services to specific groups of adolescents (e.g., poor adolescents, racial and ethnic minority adolescents, and rural adolescents) (ch. 18), and
- the role of Federal agencies in adolescent health (ch. 19).

Policy options in each of these areas are summarized in accompanying tables. These specific options are permutations of the three major policy options identified earlier:

1. improve adolescents' access to health and related services,
2. reconceptualize and invigorate Federal efforts to improve adolescent health, and
3. foster environmental changes to improve adolescent health.

It is important to emphasize that the specific policy options presented below (and above) are not intended as recommendations. OTA does not make recommendations. The options here are merely intended to illustrate a range of possible alternatives that Congress may wish to consider in addressing some of the adolescent health problems identified in specific chapters of this Report. Each of the options presented has pros and cons, and a full consideration of these would be advisable prior to taking action on any particular option.

The Conceptualization of Adolescent Health (ch. 2)

In the process of testing formerly widely accepted grand theories of adolescent development, researchers in adolescent development have found that popular conceptions of adolescents as a group whose behavior is overwhelmingly determined by "raging hormones" and of adolescence as a period when to be abnormal is normal are misguided (see, e.g., 62). Further, these misconceptions are not benign: they may have deleterious effects on attitudes towards individual adolescents and, subsequently, on inter-

Photo credit: Education Week

More appropriate conceptualizations of adolescent health would include the most traditional definitions of health (i.e., the presence or absence of disease and disability); consideration of adolescent behaviors; positive components of health (e.g., social competence); health and well-being from the perspective of adolescents themselves; and social influences on health (e.g., families, schools, communities, and policies).

actions with individual adolescents and on policy and program development.

A more positive view of adolescents should not obscure the fact that, as a period of life, adolescence involves major physiological, cognitive, psychological, and social change, perhaps more so than at any other time of life. OTA finds that as a society, **the United States provides little help to individuals as they try to cope with the normal changes of adolescence.** For example, societal expectations for adolescents are inconsistent and may simultaneously restrict adolescents unnecessarily and demand from them an unrealistic level of maturity.

Specific options related to the conceptualization of adolescent health are presented in table 9.

Parents' and Families' Influence on Adolescent Health (ch. 3)

Contrary to theories that the goal to strive for during adolescence is an individual's complete independence from his or her family, families continue to be of major importance to individuals as they go through adolescence. **If parents and families are to be a positive influence in adolescents lives, however, they need to be available, and to have accurate and useful information about adolescent development and about family functioning appropriate to adolescents.**

Table 9—Specific Options Related to Conceptualizations of Adolescent Health (ch. 2)

Option 1: Improve adolescents' access to health and related services.

- Support changes in health education efforts so that adolescents' wants and needs are taken into greater consideration.

Option 2: Support Federal data collection and research.

Data collection:

- Support the collection of data that allow for differences that occur *during* adolescence. This would require data from larger samples of adolescents.

Research:

- Support research on normal adolescent development in poor and minority adolescents.

SOURCE: Office of Technology Assessment, 1991.

Parent availability is difficult to assess, because it has both quantitative and qualitative aspects. Single parents, parents who work full time, and parents who do not live with their adolescent children may be as psychologically available to their children as some parents who are frequently at home. However, one would expect that not living with one's child, being a single parent, or working full time would all reduce the amount of time that parents have available for their adolescent children. On this account, many adolescents and families may be at risk of missing important positive parental guidance. Approximately 6 percent of adolescents (1.9 million) live in households without either parent.[161] Thirty percent of adolescents ages 10 to 18 (9.3 million adolescents) live in households headed by a single parent (1987 data (109)). Two-thirds of adolescents (17.5 million of those ages 10 to 17) live in households where both parents (or a single parent) work full time (245).[162] Anecdotal evidence suggests that other family members are often not available to take up some of the roles of parents.

Research suggests that parenting an adolescent requires a different approach than does parenting a younger child, but relative to the amount of guidance provided to parents of infants and young children, little guidance is provided to parents as their children mature into adolescence. Promising models of parent-adolescent interaction are available, however: these models provide a combination of open communication (give-and-take between parents and adolescents) in an environment of consistent support and firm enforcement of unambiguous rules (13,198). Families with such interactions tend to have adolescents with less susceptibility to antisocial influences, healthier forms of exploratory behavior, greater social competence, and greater capacity for cooperative or responsible social relationships (13, 81,93).[163]

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[161] Some of the adolescents counted by the Census Bureau as living without either parent are adolescents who are married and living with their parents.

[162] In March 1990, there were approximately 18.6 million *family households* with adolescent children ages 12 to 17 (247). Data are not readily available on the number of families with children ages 10 through 18.

That relationships between some parents and adolescents are not all that they should be is suggested by findings—not widely recognized or discussed—that the rate of maltreatment is more prevalent among adolescents than among younger children. In 1986, between 600,000 and 700,000 adolescents ages 10 to 17 were found to have been maltreated (259).[164] [165] But children's protective services have focused on early childhood abuse and neglect, failing to provide adequate protection to adolescent victims.

Another partial indicator of poor relations between adolescents and parents is the number of adolescents in foster care. In 1985, approximately 120,000 adolescents were in foster care (330). Yet a more serious indicator is the number of adolescents who "run away" or are "thrown away" from home. The number of homeless adolescents is not known, but DHHS estimated in 1984 (on the basis of 1976 data) that 1 million adolescents are homeless (256). Adolescents, more than younger children, can be expected to be homeless as a result of running or being "thrown" away.

Specific options related to providing support for improving parents' and families' influences on adolescent health, when such improvement is needed, are presented in table 10.

Photo credit: Office of Technology Assessment

There is some evidence that child protective services have failed to provide adequate protection to adolescent victims of maltreatment.

Schools and Discretionary Time (ch. 4)

Although little systematic empirical research has been supported, the studies that have been conducted suggest that academic and health outcomes of adolescent students are influenced by school environments. Overall, school environments that facilitate adolescent well-being take the shape of small (fewer than 1,000 students in the school, and 15 to 20 per class), comfortable, safe, intellectually engaging, and emotionally intimate communities. Transitions are minimized, and when they must occur, they are managed with a view toward meeting the developmentally appropriate needs of adolescents. Teachers are encouraged to initiate and develop new programs that are sensitive to the diversity of their students. The curriculum responds to individuality as well as to differences, while developing a common knowledge base among students in a particular school. Teacher, parent, and student participation in decisionmaking is encouraged. Unfortunately, this combination of features characterizes few schools, particularly those public

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[163] For a popularized guide to parenting that is in accordance with the research findings, see McBride (130).

[164] The number of maltreated adolescents differs depending on use of the original (1980) definitions or the use of the revised (1986) definitions of maltreatment (see ch. 3, Parents' and Families' Influence on Adolescent Health," in Vol. II). The revised definitions, which counted maltreatment that resulted in endangerment as well as demonstrable harm, and teenage as well as adult perpetrators, result in higher estimates. Although there are differences by age and type of maltreatment within adolescence, the general order of prevalence in 1986 was: 1) physical abuse, 2) educational neglect (which was the leading form of maltreatment for older adolescents), 3) emotional neglect, 4) emotional abuse, and 5) sexual abuse. OTA was not able to calculate the rate of physical neglect using the information available in the report from the National Center on Child Abuse and Neglect (within DHHS).

[165] Adolescents were, however, more likely to suffer moderate injuries and far less likely to suffer fatalities due to maltreatment than were younger children (259).

Photo credit: Office of Technology Assessment

Many schools serving socioeconomically and educationally disadvantaged students lack the combination of features that promotes adolescents' well-being.

schools serving socioeconomically and educationally disadvantaged students, many of whom are racial and ethnic minorities. Instead, the larger, often impersonal, schools that these students attend have been found to be associated with higher rates of retention in grade, suspensions from school, discipline and crime problems, lowered social cohesion, more negative student attitudes, and greater student passivity (including lower participation in school activities, and less interaction with faculty).

Specific practices such as tracking and "teaching to the test" for minimum competency testing have been associated with lowered levels of academic achievement, retention in grade, and school dropout, especially for low income racial and ethnic minority students. Although school practices and policies are rarely investigated for their direct links to adolescent health and well-being, studies have shown that lower grades are associated with violence toward school property, other delinquency, and pregnancy. Students who are retained in grade school are more likely to drop out of school before graduation. In turn, school dropout is associated with high rates of subsequent poverty and unemployment, underemployment, diminished earnings, and adolescent pregnancy and parenting.

Table 10—Specific Options Related to Parents' and Families' Influence on Adolescent Health (ch. 3)

Option 1: Improve adolescents' access to health and related services.
- Support the dissemination to parents of accurate and useful information about adolescent development and appropriate parenting (e.g., following authoritative and democratic family models).
- Support access to individual and family therapy services for adolescents from abusive or dysfunctional families and families with stepparents.

Option 2: Support Federal data collection and research.
- Support additional research on parenting styles and their effects on adolescent health and development, especially among poor adolescents and racial and ethnic minority adolescents.
- Support demonstration projects for alternative child protection approaches for adolescents (e.g., therapeutic foster care, transitional living).
- Support demonstration projects to determine and change attitudes of health and related service providers so that families come to be treated more respectfully in their interactions with public and private agencies.
- Support research on the relationship between adolescent maltreatment and health problems such as depression, alcohol and drug abuse, suicide attempts, and other self-destructive behaviors.

Option 3: Foster changes in adolescents' environments.
- Support family and parental leave including flexible time arrangements to promote appropriate parental involvement in their adolescents' lives.

SOURCE: Office of Technology Assessment, 1991.

Adolescents, particularly females, can be particularly harmed by the transition from elementary to middle or junior high school grades, if such transitions are not handled well in the middle school setting (29). The environment of the typical junior or middle school adolescent has been found to clash with early adolescents' needs for autonomy, their budding cognitive abilities to think at an abstract level, their heightened needs for intimacy, and their heightened self-consciousness.

Teachers' attitudes and parental involvement are critical links in the relationships between school policies and environments and health outcomes for adolescents. Teachers' attitudes toward students tend to be more positive in schools that are smaller, use decentralized governance and participatory deci-

Photo credit: Kevin O'Malley, Los Angeles, CA

Adolescents, particularly females, can be harmed by the transition from elementary to middle or junior high school if such transitions are not well handled in the middle school setting.

sionmaking, and rely less on standardized testing. Parental involvement in schools has been shown to be related to increasing the responsivity and efficiency of schools and to fair treatment of students, but the evidence on academic achievement is mixed.

Some interventions have shown increases in tolerance across racial groups and improvements in the self-esteem or academic achievement of racial and ethnic minorities; these interventions include exposure to persons of differing cultural backgrounds, learning in mixed ability groupings, a multicultural curriculum, bilingual education, and school-based collaborations with minority communities.

Much of adolescents' time is spent away from school. The scarce data that are available suggest that sufficient opportunities do not exist for adolescents to spend their discretionary time in ways that are attractive and satisfying, conducive to healthy development, and acceptable to the adult community. The problem has been found to be worse in poor than in middle-class communities.

The Federal share in funding for schools (6.3 percent of public school revenues in 1988) rose until 1980, when it began to fall again (249). Financial and programmatic support for recreation and youth service activities from Federal, State, and local governments, and the private for-profit sector, has been meager and fragmented. Federal support for 4-H clubs and, more recently, the National and Community Service Act of 1990 (Public Law 101-610) is an exception.

Table 11—Specific Options Related to Schools and Discretionary Time (ch. 4)

Option 1: Improve adolescents' access to health and related services.

- Re-evaluate policies and practices associated with tracking students by academic performance.
- Increase Federal support for schools to mitigate disparities in community tax bases.
- Support promising interventions such as peer tutoring, decentralized decisionmaking, and innovative approaches to parental involvement while including rigorous evaluations of these interventions.
- Support education for students and school and youth services personnel on topics in adolescent development.
- Promote the widespread dissemination, transfer, and application of knowledge about adolescent development, and recreational and community service programs for adolescents.

Option 2: Support Federal data collection and research.

Data collection:

- Collect data on the availability of school-based resources and facilities that could be used by adolescents in their discretionary time.
- Support the collection of data on the availability of recreational, youth service, and community service outlets for adolescents, especially those living in poor communities.

Research:

- Support rigorously evaluated demonstration projects on the impact of multicultural and bilingual curricula on adolescent health outcomes such as self-esteem and academic achievement.
- Support research on the features of recreational and youth and community services activities that both attract adolescents and are health-enhancing.
- Support a multisite demonstration project of efforts to improve academic achievement and school retention for minority, poor, and academically marginal students, using factors that are known or appear to be effective in improving health outcomes as a framework for intervention. Support research on adolescent preferences for recreational, community service, and youth services outlets in poor, minority, and rural communities.

Option 3: Foster changes in adolescents' environments.

- Support the expansion of recreational (e.g., pools, gymnasiums, parks) and community service programs (e.g., peer tutoring) in elementary, middle, junior high, and senior high schools, and in communities with large numbers of minority and/or poor adolescents. Especially support the involvement of adolescents in the design and implementation of these programs and the provision of incentives for adolescent and adult participation.

SOURCE: Office of Technology Assessment, 1991.

Specific options related to schools and discretionary time are presented in table 11.

Prevention and Services Related to Selected Adolescent Health Concerns (chs. 5 through 14)

This section discusses specific findings and policy options related to the prevention and treatment of specific adolescent health problems:

- accidental injuries (ch. 5),
- chronic physical illnesses (ch. 6),
- nutrition and fitness problems (ch. 7),
- dental and oral health problems (ch. 8),
- AIDS and other sexually transmitted diseases (STDs) (ch. 9),
- pregnancy and parenting (ch. 10),
- mental health problems (including suicide attempts and suicide) (ch. 11),
- alcohol, tobacco, and drug abuse (ch. 12),
- delinquency (ch. 13), and
- homelessness (ch. 14).

Summary information on the prevalence of these problems and the adolescents most affected is presented in appendix B, "Burden of Health Problems Among U.S. Adolescents," in Volume III.

Accidental Injuries (ch. 5)[166]

Since 1970, the accidental death rate for U.S. adolescents has declined (figure 3 in "Major Findings"), although not to the levels seen in the 1950s (65,184). Accidental injuries today are responsible for more deaths to U.S. adolescents than any other cause, representing more than half of all deaths to persons ages 10 to 19 in 1987 (290). In 1987, 10,658 adolescents ages 10 to 19 died as a result of an accidental injury.

Vehicle-related (motor and nonmotor vehicle) accidents account for almost three-fourths of accidental *deaths* among persons ages 10 to 19; other important causes of accidental deaths in this age group are drowning accidents (8 percent of accidental deaths), and firearm accidents (4 percent of accidental deaths). Exposure of adolescents to firearms appears to be quite high. Over 40 percent of the 8th and 10th graders surveyed in the National Adolescent Student Health Survey reported that they had used a gun during the past year; of these, over 40 percent had used a gun more than 10 times (10).

Many U.S. adolescents experience accidental injuries that are not fatal but cause visits to physicians' offices or hospital emergency rooms, temporary or permanent disability, restricted-activity and school-loss days, and other problems. Comprehensive national data on nonfatal accidental injuries are not available,[167] but sports injuries incurred while playing basketball, football, or baseball, or riding a bicycle accounted for 772,000 emergency room visits by adolescents in 1988 (239).

Photo credit: Bethesda-Chevy Chase Rescue Squad

Efforts to develop a national strategy to prevent accidental injuries have been hampered in part by a lack of information about the causes of such injuries and the effectiveness of interventions to prevent injuries or reduce their severity. To address the lack of information about the causes and extent of injuries among adolescents, Congress could support the collection of data that include information about levels of exposure to risks.

Adolescent males, particularly males ages 15 to 19, are at higher risk for all leading accidental injuries and deaths than adolescent females, but the precise reason (e.g., differing exposure rates) cannot be ascertained from available data. White male and American Indian and Alaska Native adolescents have the highest rates of motor-vehicle-related accidental deaths. Motor vehicle deaths and injuries among adolescents are associated with driving at night and with drinking. Adolescent drivers do only 20 percent of their driving at night, but they suffer more than half of their crash fatalities at night. According to the National Highway Traffic Safety Administration, about half of the motor vehicle crash fatalities among adolescents are related to alcohol, and about one-quarter of fatally injured drivers ages 15 to 19 are intoxicated. It appears to take less alcohol to put an adolescent at risk for a serious or fatal motor vehicle crash than it takes to put an adult at such a risk.

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[166] To make this Report more accessible to the lay reader and for other reasons, OTA has chosen to use the term accidental injury in this Report. The term preferred by those in the injury prevention community, however, is unintentional injury (e.g., 184). Those who prefer the term unintentional injury believe that the term accidental injury implies that injuries cannot be prevented, whereas the term unintentional injury implies that while an individual may not have consciously intended to hurt him or herself, some action taken or not taken may have prevented the injury. Perhaps to overstate this perspective somewhat, all injuries are thus avoidable. The position that true "accidents" do not occur (i.e., by chance, entirely without cause) correctly brings attention to injuries as a public health problem to which additional preventive interventions can and should be applied, but it seems to be unprovable. Use of the term "unintentional" also may have the unfortunate effect of placing the onus of causation (and responsibility for precautions) exclusively on the person who is injured, although in fact unintentional injuries may be caused, although unintentionally, by persons, organizations, or systems other than the victim.

[167] For example, available data on visits to physicians' offices and hospitals do not record the cause of injury.

Of the approaches to the prevention of accidental injuries among adolescents, there appears to be some consensus that automatic protection (e.g., airbags in cars, helmets for football players, environmental improvements such as better street design) is the most effective strategy for injury protection, followed by laws and regulation when strictly enforced (e.g., motorcycle and bicycle helmet laws, safety belt laws, nighttime driver curfews for adolescents), and, lastly, education and persuasion. Declines in accidental motor vehicle injury deaths during the 1980s, for example, have been attributed to State safety belt laws and the subsequent increased use of safety belts, and State minimum drinking age laws (158).[168] However, programs combining education *and* incentives (e.g., distribution of free or discounted bicycle helmets in conjunction with a community-wide education program to encourage use of helmets) have also shown some evidence of effectiveness. Basic improvements in injury prevention strategies, such as additional driving time in driver education classes or with parents prior to licensing of adolescent drivers, enhanced access to swimming lessons for poor adolescents, changes in sports regulations, and preventing inappropriate access to firearms, also seem warranted.

Efforts to develop a national strategy to prevent accidental injuries among adolescents have been hampered in part by a lack of information on both the causes of many such injuries and on the effectiveness of interventions to prevent accidental injuries or limit their severity. Cultural, political, and economic factors also appear to have impeded the adoption of preventive strategies that are likely to prove effective (see, e.g., 25). For example, there is no Federal regulation mandating the installation of airbags in cars and trucks; gun control remains a controversial issue[169]; increased driving time in school driver education classes and additional certified trainers for school sports would cost schools money; and bicycle helmets are expensive.

Table 12—Specific Options Related to Accidental Injuries (ch. 5)[a]

Option 2: Support Federal data collection and research.

Data collection:

- Support the collection of national data on accidental injuries *and their causes* from the spectrum of health services delivery settings (including clinics, emergency facilities, and schools). Data collection should include the measurement of exposure as a risk factor.

Research:

- Support research to investigate more fully the causes of injuries and injury related-deaths, including research on accidental injuries and deaths (particularly motor vehicle deaths, drowning deaths, firearm-related deaths, and sports-related injuries).
- Support research and rigorously evaluated demonstration projects on innovative ways to prevent accidental injuries (e.g., communitywide education and incentives to increase the use of bicycle helmets, efforts to provide more driving time in school-based driver education classes).
- Support research on the special needs of adolescents coming to emergency facilities as a result of accidents.

Option 3: Foster changes in adolescents' environments.

- Mandate the use of airbags in cars and trucks, including the older cars and trucks that are likely to be used by adolescents.
- Mandate the use of bicycle and motorcycle helmets.
- Support local lending programs to distribute free protective equipment (e.g., football and bicycle helmets) to adolescents in economic need, similar to programs that lend automobile infant seats to needy families.

[a] Options related to intentional injuries (e.g., suicide and homicide) are presented in other tables. Options related to suicide are in table 16, "Specific Options Related to Mental Health Problems," and options related to homicide are in table 20, "Specific Options Related to Delinquency."

SOURCE: Office of Technology Assessment, 1991.

Specific options related to prevention and services related to accidental injuries among U.S. adolescents are presented in table 12.

Chronic Physical Illnesses (ch. 6)[170]

Many adolescents experience acute respiratory illnesses or other transient health problems, but a few adolescents experience chronic physical illnesses or disabilities. Good recent clinical epidemiological data specific to U.S. adolescents' physical health are not available, but the best estimates suggest that 5 to 10 percent of adolescents experience a serious chronic condition that severely limits their activities (78, 291). These include leukemia, severe asthma, cystic fibrosis, traumatic brain injury, cerebral palsy, diabetes, hearing or visual impairment, sickle cell disease, or mental retardation.

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[168] OTA did not evaluate the validity of these attributions. The cause of declines in deaths by drowning, which have been more marked than declines in motor vehicle-related deaths (65), is not known.

[169] As noted earlier, however, the sale of firearms to adolescents is illegal (see ch. 13, "Delinquency: Prevention and Services," in Vol. II).

[170] This chapter excludes the physical health problems of AIDS and other STDs, which were felt to merit discussion in a separate chapter (see ch. 9, "AIDS and Other Sexually Transmitted Diseases: Prevention and Services," in Vol. II).

The last national survey of the physical health of adolescents that actually involved clinical examinations of large numbers of adolescents was completed in 1970; data from that survey suggested that 22 percent of adolescents had some significant physical problem that could interfere with their development.[171]

Information is particularly limited on the physical (and other) health problems of poor and racial and ethnic minority adolescents and on health problems from the perspective of adolescents. There are virtually no reliable data on the health status of minority and poor adolescents and their utilization of health services. Data comparing the health concerns of adolescents, their parents, and health care providers suggests that adolescents have concerns that differ substantially from those of health care providers and that, even in relation to clinical findings of health care providers, parents may minimize the health problems of adolescents. Yet national health survey information, especially for younger adolescents (e.g., those under age 17) is routinely collected from parents, rather than from the adolescents themselves.

Specific options related to chronic physical illnesses are presented in table 13.

Photo credit: Benjamin Smith, Washington, DC

Information is particularly limited on the physical (and other) health problems of poor and racial and ethnic minority adolescents and on health problems from the perspective of adolescents.

Nutrition and Fitness Problems (ch. 7)

Adolescent-specific data on nutrition and fitness, aside from average nutrient intake information, are limited and often neglected in favor of data on adults. Existing data represent the average adolescent population, often missing the smaller minority and ethnic groups. In addition, research on nutrition and on fitness is hampered by inconsistent outcome measures and other methodological problems. A major problem is the absence of research on how adolescents' nutritional and fitness behaviors affect their current or future health.

If one accepts the conventional wisdom concerning nutrition and fitness needs,[172] available data suggest that most adolescents suffer from some nutritional or fitness problem (usually mineral deficiencies, imbalanced diets, and overweight or obesity). Female adolescents and those adolescents who are most intensively engaged in fitness and athletic activities are more likely than others to have nutritional problems. Available information suggests problems with obesity for black female adolescents, Mexican Americans, Native Hawaiians, American Indians and Alaska Natives, Samoans, and Tongans of both sexes.

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[171] A National Health and Nutrition Examination Survey (NHANES III) will be completed in 1994 (see ch. 6, "Chronic Physical Illnesses: Prevention and Services," in Vol. II). Children as a group, but not adolescents specifically, are being oversampled for this survey. Only 3,220 adolescents ages 12 to 19 are included in the survey, while approximately 11,000 individuals ages 2 months to 11 years are included (7,771 of whom are younger than 6). The numbers of 10- and 11-year-olds are not available separately.

[172] That is, one assumes that the same nutrition and fitness factors that adversely affect adult health adversely affect adolescent health.

Table 13—Specific Options Related to Chronic Physical Illnesses (ch. 6)

Option 1: Improve adolescents' access to health and related services.

- Support efforts to reduce fragmentation in delivery of health services to adolescents with chronic physical illnesses.
- Provide financial support to families of adolescents with catastrophic health care needs.
- In health education, support efforts to inform adolescents about the availability of treatments for problems of importance to them (e.g., acne, dysmenorrhea).

Option 2: Support Federal data collection and research.

Data collection:

- Support the collection of information on the prevalence of a broad range of physical health problems, including serious chronic problems of low prevalence and chronic problems of importance to adolescents.
- Support oversampling of minority, poor, and rural adolescents in population-based and health services utilization surveys.

Research:

- Support efforts to determine from adolescents themselves the types of health problems that are of importance to them.
- Study financing alternatives for adolescents with catastrophic health care needs.

SOURCE: Office of Technology Assessment, 1991.

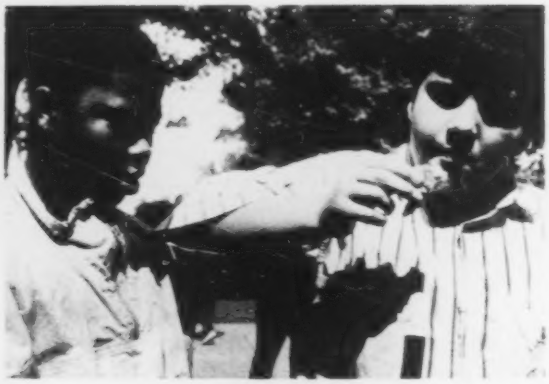

Photo credit: Benjamin Smith, Washington, DC

A major shortcoming in nutrition and fitness research is the absence of information about how adolescents' nutritional and fitness behaviors affect their current or future health.

Adolescents appear to have little information about nutrition (including information on how to interpret nutrition information on food labels), and there is little evidence that current school-based nutrition education efforts, with the possible exception of those that take adolescents' preferences into account, influence what adolescents eat. Others, such as the family, community, or school, may have more control than adolescents over their nutritional choices.

Photo credit: Coray Macklin, Atlanta, GA

Adolescents' physical abilities change over time and are highly individual.

Adolescents' physical abilities change over time, and may be highly individual, depending on such factors as gender, race, the rate of physical development and growth, and specific health problems. It is not clear that those involved in overseeing the physical education of adolescents are aware of these individual and developmental differences, or that they take them into account in designing physical education activities. Access to fitness activities is a special problem for many adolescents with chronic physical and mental illness and disabilities.

Specific options related to adolescents' nutrition and fitness problems are presented in table 14.

Dental and Oral Health Problems (ch. 8)

The prevalence of caries increases during adolescence, but national data show a remarkable decline in the prevalence of dental caries among U.S. adolescents who are in school. National data on the dental and oral health of adolescents not in school, disabled adolescents, adolescents in institutions, minority adolescents, and poor adolescents are generally not available.

The fluoridation of water supplies in the United States, initiated in 1945 with the support of the Federal Government, is believed to be largely responsible for recent declines in dental caries among U.S. children and adolescents. As of 1988, fluoridated tap water was available to 61 percent of the United States population (276). One alternative to fluoridated tap water is the topical application of fluoride to the teeth during a visit to the dentist.

Table 14—Specific Options Related to Nutrition and Fitness Problems (ch. 7)

Option 2: Support Federal data collection and research.

Data collection:

- Support a survey of schools and communities to determine the availability of facilities for a range of physical activities and the competence of adults supervising physical education.
- Support the routine collection of data on adolescents' nutritional status with oversamplings of disabled, minority, and poor adolescents in population-based surveys.

Research:

- Support research on the effects of adolescents' nutrition and fitness choices on adolescents' current and future health.
- Support research on the nutritional and fitness preferences of adolescents in order to help target educational and other preventive interventions.
- Support research on the relationships between nutritional needs and varying levels of physical activity.

Option 3: Foster changes in adolescents' environments.

- Support the provision of healthy nutritional choices to adolescents in schools and the community (e.g., in fast food outlets).
- Support efforts to improve access to fitness activities for adolescents with special health care needs (e.g., the chronically ill and disabled), overweight, and poor adolescents.
- Support the education of physical education teachers, coaches, trainers and others about adolescent-specific factors that could influence adolescents' physical abilities.

SOURCE: Office of Technology Assessment, 1991.

Table 15—Specific Options Related to Dental and Oral Health Problems (ch. 8)

Option 1: Improve adolescents' access to health and related services.

- Support Medicaid reforms (e.g., increase reimbursement rates, standardize some administrative procedures, enforcement of current Federal Medicaid requirements for State participation) to encourage more dentists to participate in the program.
- Support efforts to ensure that publicly funded dental programs offer adolescents basic preventive and therapeutic services (e.g., topical fluoride, sealants, prophylaxis, restorations, and space maintenance).

Health education:

- Support the provision of information to adolescents on dental hygiene and means of access to services.
- Support education of dentists on adolescent-specific conditions and needs (e.g., localized juvenile periodontitis and the effects on oral health of certain behaviors such as the use of smokeless tobacco).

Option 2: Support Federal data collection and research.

Data collection:

- Support the collection of dental health information on adolescents who are not in school, disabled, in institutions, racial and ethnic minorities, and poor.
- Support research on the availability of dental care for poor and low-income adolescents not eligible for Medicaid.

Research:

- Support research on the immediate and long-term physical (e.g., nutritional) and psychological (e.g., self-esteem, social withdrawal) health effects of poor adolescent dental and oral health.

Option 3: Foster changes in adolescents' environments.

- Support efforts to improve access to fluoridated water.

SOURCE: Office of Technology Assessment, 1991.

It is important that adolescents have regular visits to the dentist so that they can receive preventive dental services (e.g., cleaning, education about personal dental hygiene) and therapeutic services (e.g., filling of dental caries, treatment of rampant caries, treatment of severe malocclusion). Currently, the dental visit is the primary locus for dental and oral health education, suggesting that limited access to such visits may interfere with appropriate dental health education.

Two factors that greatly influence adolescents' access to basic and other dental care are income level and the possession of health insurance that covers basic dental services. Adolescents from low-income families who do not have Medicaid are the least likely to have private dental insurance and are also the least likely to make annual dental visits, followed by adolescents on Medicaid, and privately insured adolescents. Most privately insured adolescents do not have basic dental benefits.[173] Dental programs in public health clinics may not provide certain basic dental services that could reduce or prevent adolescents' dental and oral health problems (237).

Information on adolescents' attitudes or behaviors related to dental or oral health and information on the effectiveness of educational interventions in promoting dental and oral health is generally lacking.

Specific options related to adolescents' dental and oral health problems are presented in table 15.

AIDS and Other[174] Sexually Transmitted Diseases (ch. 9)

In recent years, there has been growing national alarm about and attention to the problem of AIDS, a fatal disease caused by HIV. Currently, the prevalence of AIDS among U.S. adolescents is not very high. As of September 1990, there were 568 cases reported among 13- to 19-year-olds (280). This situation should not be interpreted as eliminating cause for concern, however, because the prevalence of HIV infection is undoubtedly higher. The median interval between infection with HIV and the development of AIDS is about 10 years (278), so one would not expect many adolescents to have full-blown AIDS.

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[173] See ch. 16, "Financial Access to Health Services," in Vol. III.

[174] Although HIV, the virus that causes AIDS, can be, and usually is, transmitted sexually in adolescents, there are other modes of transmission, such as through intravenous drug use and through the transfusion of contaminated blood and blood products, that are not common to many other STDs although they may occur.

In the absence of a cure for AIDS, preventing the spread of HIV among adolescents is essential. One way of preventing the spread of AIDS is to encourage adolescents to delay the initiation of sexual intercourse or prevent intravenous drug use. For adolescents who are sexually active,[175] the use of condoms is essential. Recent data suggest an encouraging increase in adolescents' use of condoms, but more than half of sexually active female adolescents do not use condoms at first intercourse (68) and only 22 percent of sexually active females reported current[176] use of condoms in 1988 (141).

More creative and effective approaches are needed to prevent the spread of HIV infection, AIDS, and STDs among adolescents who are not yet infected. Apart from ensuring the safety of the Nation's blood supply, efforts to prevent the spread of HIV infection include encouraging adolescents (especially young adolescents) to delay the initiation of sexual activity, encouraging sexually active adolescents to use condoms and "safer sex practices," and encouraging adolescents to refrain from intravenous drug use or sharing contaminated needles. For many reasons, including time and fiscal restraints, few careful evaluations of AIDS and STD prevention projects have been conducted. AIDS prevention efforts, it often seems, do not seem to take advantage of the opportunity to encourage the simultaneous prevention of other STDs. Efforts to prevent AIDS and other STDs are generally impeded by a lack of information about adolescents' attitudes and sexual practices and a seeming unwillingness on the part of program developers and policymakers to act on information that is available.

Existe una conección entre el SIDA y las enfermedades venéreas.
AMERICA RESPONDE AL SIDA

Photo credit: Centro del Control de las Enfermedades de los Estados Unidos

The link between the prevention of AIDS and the prevention of other sexually transmitted diseases (STDs) is often not made in health education efforts.

Controlling the spread of HIV infection and STDs also means identifying adolescents who have these conditions and providing effective treatment (if available) and counseling about safer sex practices. Possibly, information about the availability of confidential treatment could be communicated to adolescents through health education courses offered in schools. It is more difficult to inform adolescents who are not in school.

Adolescents' compliance with treatment regimens for STDs have been shown to be more effective when they are delivered by clinicians who are responsive to adolescents and their health problems and who are perceived by adolescents to be friendly, understanding, and willing to take their time; and when treatment is administered in single-dose regimens (if available) (11,16,122).

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[175] In 1988, 42.5 percent of 15- to 19-year-old females surveyed for the DHHS National Survey of Family Growth reported having had sexual intercourse in the last 3 months (68). Certain adolescents (e.g., male adolescents, black adolescents, adolescents living on the streets) are more likely to be sexually active than others.

[176] Estimates of the "current" use of condoms are based on responses to a question to female adolescents participating in the DHHS National Survey of Family Growth about what form of contraception they are using now (141).

Teen-AIDS
LINE 340-AIDS
AIDS

Photo credit: Education Week

Congress could support the provision to adolescents of information relevant to obtaining access to services for the prevention and treatment of HIV infection, AIDS, and other STDs.

Treatments for HIV infection and AIDS (e.g., zidovudine) are undergoing clinical trials. Access to clinical trials of AIDS treatments is difficult for adolescents with AIDS or HIV infection who do not have access to the mainstream health care delivery system (e.g., homeless and runaway adolescents, uninsured adolescents). No specific outreach is in place to bring more of these adolescents into research trials.

Specific options related to AIDS/HIV infection and STDs among adolescents are presented in table 16.

Pregnancy and Parenting (ch. 10)

The United States has higher adolescent pregnancy rates, birth, and abortion rates than a number of other industrialized countries[177] (see figure 14). It has been estimated that 4 out of 10 U.S. females experience pregnancy before the age of 20 (210), and in 1988, there were nearly half a million births (488,941 births) to U.S. females under age 20 (294). About 65 percent (322,406 births) of these births were out-of-wedlock (312,499 to females ages 15 to 19 and 9,907 to females under age 15) (210,294). Adolescent mothers and their infants are typically in need of substantial social support, including food, income support, housing, mentoring, education, vocational training, parenting skills classes, child care, and employment.

Table 16—Specific Options Related to AIDS/HIV Infection and Other Sexually Transmitted Diseases (ch. 9)

Option 1: Improve adolescents' access to health and related services.

- Encourage school districts to make condoms and condom-related education easily available to the adolescents who are most likely to be sexually active (e.g., older adolescents).
- Support active and flexible approaches to the provision of treatment for STDs to encourage adolescents to seek treatment and return for followup care.
- Target AIDS/HIV prevention (e.g., condom distribution) and education efforts to adolescents living on their own.
- Support outreach efforts to bring adolescents who are not in contact with the mainstream health care system into clinical trials for AIDS drugs.

Health education:

- Support the provision of information to adolescents on the prevention and treatment of AIDS *and* STDs.
- Support the provision to adolescents of information relevant to obtaining access to services for the prevention and treatment of AIDS and STDs.
- Support training and dissemination of information on the specific needs of adolescents for health care workers in STD clinics.
- Support the dissemination of prevention and education efforts into nonmetropolitan areas, to younger adolescents, to adolescents who are intravenous drug users, and homosexual or bisexual adolescents.

Option 2: Support Federal data collection and research.

Data collection:

- Mandate confidential reporting of a broader spectrum of STDs.
- Encourage States to collect and report additional demographic data on those with STDs (e.g., smaller age breaks, socioeconomic status, and race and ethnicity).
- Support the regular collection of population-based information on STDs, including HIV, among adolescents.

Research:

- Support research to assess the need for adolescent-specific guidelines for the treatment of STDs and AIDS. Support research into therapeutic regimens that are likely to increase adolescent compliance (e.g., single-dose regimens).

SOURCE: Office of Technology Assessment, 1991.

Since the 1970s, sexual activity rates (the number of individuals per 1,000 who have ever had sexual intercourse) among U.S. adolescent females have increased (see figure 15). U.S. adolescent pregnancy rates have also increased since the 1970s, but the increase in pregnancy rates has been modest in comparison to increases in sexual activity rates (from 94 pregnancies per 1,000 females under age 20 in 1972 to 109 in 1987) (figure 15). Pregnancy rates among *sexually active* females declined between 1970 and 1985, suggesting that sexually active adolescents were making more effective use of contraception. More recent (1987) data suggest an

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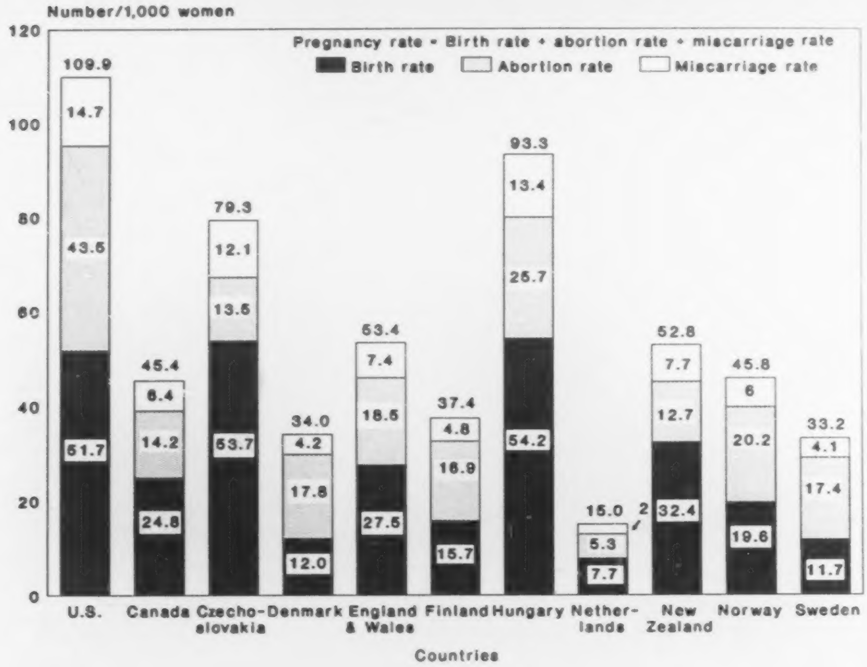
[177] OTA did not assess whether levels of sexual activity were equivalent across these nations.

Figure 14—Birth Rates, Abortion Rates, Miscarriage Rates, and Pregnancy Rates Among Females Ages 15 to 19 in 11 Countries, 1983

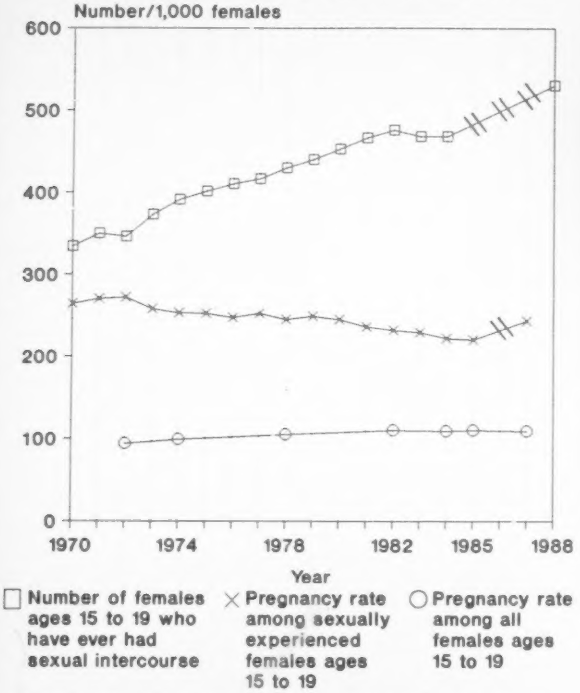


SOURCE: National Collaboration for Youth, *Making the Grade: A Report Card on American Youth* (Washington, DC: 1989).

Photo credit: Katherine Criss, New York, NY

Adolescent mothers and their children typically need substantial social support.

Figure 15—Trends in Sexual Experience Rates and Pregnancy Rates Among U.S. Females Ages 15 to 19 and Trends in Pregnancy Rates Among Sexually Experienced U.S. Females Ages 15 to 19, 1970-88



SOURCE: Office of Technology Assessment, 1991, based on data from the following sources: **Pregnancy rates:** National Academy of Sciences, National Research Council, Commission on Behavioral and Social Sciences and Education, Committee on Child Development Research and Public Policy, Panel on Adolescent Pregnancy and Childbearing, *Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing, Volume II: Working Papers and Statistical Appendixes*, S.L. Hofferth and C.D. Hayes (eds.) (Washington, DC: National Academy Press, 1987); and J. Lipsett, Public Information Press Assistant, Department of Communications and Development, Alan Guttmacher Institute, New York, NY, personal communication, Feb. 27, 1991. **Sexual experience rates:** J.D. Forrest and S. Singh, "The Sexual and Reproductive Behavior of American Women, 1982-1988," *Family Planning Perspectives* 22(5):206-214, 1990; and S.K. Henshaw, Alan Guttmacher Institute, New York, NY, personal communication, May 21, 1990.

increase in pregnancies among sexually active adolescent females, however (figure 15).

For largely unknown reasons, most available contraceptives have not proven to be as effective with adolescents as they are with older females. The recent introduction of Norplant, an implantable long-term contraceptive, has not been tested with adolescents.

Photo credit: Education Week

There is little systematic knowledge about risk factors for adolescents' involvement in sexual activity, use of contraceptives, pregnancy, abortion, and parenthood. Congress could support research on factors that lead adolescents to engage in unprotected sexual intercourse and research on contraceptives.

Unfortunately, there is little systematic knowledge about risk factors for adolescents' involvement in sexual activity, use of contraception, pregnancy, abortion, and parenthood. This lack of knowledge limits the appropriate design of pregnancy prevention programs. Further, development of appropriate designs is limited because most education-based programs designed to prevent adolescent pregnancy have not been rigorously evaluated.

Some interventions for pregnancy prevention appear particularly promising and deserving of implementation accompanied by rigorous evaluation. These include preventive education begun before adolescents have begun to engage in sexual intercourse, and broad-based programs that go beyond education about sexuality (e.g., life-options interventions[178]) (23,145,169). Some broad-based programs achieve worthwhile goals other than reductions in pregnancy rates (e.g., reductions in school absenteeism), even if they are not able to demonstrate a reduction in pregnancy rates (23,145, 169).

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[178] Life-options interventions designed to prevent adolescent pregnancy have provided work opportunities to develop job-related skills along with educational training, family life education, and discussion of sexuality.

Most adolescent pregnancy prevention programs focus on adolescent females. Given that males have a role in pregnancy prevention (as well as in safer sex practices to reduce the risk of HIV infection), there is a compelling need to develop effective ways to engage adolescent and young adult males in efforts to prevent adolescent pregnancy.

Considerable research suggests the need for, and effectiveness of, a range of intensive health and other services for adolescents who become pregnant. Promising approaches to preventing the potentially adverse effects of an unwanted pregnancy include improving access to pregnancy testing and counseling; improving the availability of abortion; and improving the availability of adoption supports. For adolescents who want to keep their babies, prenatal and postnatal health care, and the provision of housing, mentoring, education, child care, and employment to pregnant and parenting adolescents, are needed.

Not all adolescents who become pregnant and want to bear their children may be able to obtain adequate prenatal care. Among adolescents without health insurance, the problem is particularly critical. Even unmarried adolescent females whose parents have otherwise adequate health insurance may not be able to obtain prenatal care because of a loophole in the Pregnancy Discrimination Act of 1978 that omitted minor dependents from requirements for coverage for prenatal care.

Studies of programs that have attempted to arrange a comprehensive range of services (e.g., housing, child care, transportation, education, jobs) for adolescent parents have found that problems occur in attempting to locate and broker services.

Specific options related to pregnancy and parenting among adolescents are presented in table 17.

Mental Health Problems (ch. 11)

Although a national systematic epidemiologic study of mental health problems among children and adolescents has not yet been fully mounted, recent data suggest that approximately 1 out of 5 adolescents ages 10 to 18 suffer from a diagnosable mental disorder (e.g., conduct disorder, separation anxiety disorder, depression). The identification of adolescents in need of mental health treatment by standard assessment techniques is often based more on adolescents' outward behavior of concern to teachers, parents, and society at large than on adolescents' subjective distress (e.g., depression and anxiety) and the subjectively perceived needs of the adolescents themselves. When asked, an average of one out of four adolescents report symptoms of emotional distress, although the rate is higher among rural and Native American adolescents.

Certainly one of the most severe manifestations of subjective distress among U.S. adolescents is suicide. In recent years, the U.S. adolescent suicide rate appears to have increased; suicide is currently a major cause of death among U.S. adolescents (see figure 4 in "Major Findings"). In 1988, the suicide rate among 15- to 19-year-olds was 10.3 suicides per 100,000 population (see figure 4 in "Major Findings")—apparently triple the rate in the mid-1950s.[179] Firearms are the leading method for committing suicide, accounting for half of all successful suicides.

Adolescents who have made a previous suicide attempt are at increased risk for suicide. Other risk factors for adolescent suicide include being male; being white or Native American; the presence of a mental health or substance abuse problem; concern about sexual identity; school problems; family disruption and parental loss; loss of a close personal relationship (i.e., boyfriend or girlfriend); and exposure to other adolescent suicides.

Trends in adolescent suicide attempts are not available, but according to data from the 1987 National Adolescent Student Health Survey, one out of seven adolescent 10th graders reported having attempted suicide (10). Females are more likely to report suicide attempts.

Mental health promotion is a term describing a broad range of efforts that seek to foster a healthy mental equilibrium and maintain emotional stability (39, 63); most mental health promotion efforts can

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[179] Comparisons of suicide rates across time should be viewed cautiously, however, because reports of suicides could be influenced by public attention or greater acceptability of recording suicide as a cause of death. Problems concerning the validity of suicide data are discussed in depth in ch. 11, "Mental Health Problems: Prevention and Services," in Vol. II.

Table 17—Specific Options Related to Pregnancy and Parenting (ch. 10)

Option 1: Improve adolescents' access to health and related services.

Services for pregnancy prevention:

- Support efforts to make contraception (and information about using contraception effectively—also see *Federal research options*) readily available to sexually active adolescents.
- Support the provision of comprehensive services (i.e., mental health, social, educational, vocational services) to pregnant and parenting adolescents.

Services for adolescents who are pregnant:

- Support outreach to ensure that pregnant adolescents who choose to give birth remain in school and obtain prenatal care. Support a range of intensive services for pregnant adolescents who choose to bear children (including prenatal care, housing, nutritional support, education, counseling).
- Eliminate the loophole in the Pregnancy Discrimination Act of 1978, which currently does not require that dependents other than spouses be covered for prenatal care (*also see ch. 16*).
- Support equal opportunity to abortion services, including a greater range of alternatives to parental notification and permission (*also see ch. 17*).

Services for adolescents who are parents:

- Support the availability of a range of intensive services for adolescent parents and their children, and of adequate assistance to manage adolescents' access to such services; such services include housing, food, transportation, child care, academics, and parenting education and assistance.

Health education:

- Support the provision to adolescents of information relevant to obtaining access to contraceptive and other services that could protect them against pregnancy.
- Support pregnancy prevention education for young adolescents, before they are likely to become sexually active. Support implementation (with accompanying rigorous evaluation) of broad-based, intensive programs such as life-options training and work experience programs which are combined with participatory discussions of responsible sexuality, and the provision of contraception. Such innovative efforts would require more intensive, and perhaps different, training of family life educators.
- Support the implementation (with accompanying rigorous evaluation) of parent-child communication groups with a focus on sexuality.
- Support targeting of pregnancy prevention education efforts to black and poor adolescents.

Option 2: Support Federal data collection and research.

Data collection:

- Support routine collection of data on adolescent sexual activity and birth-related outcomes.
- Support routine collection of data on sexual activity, pregnancies, and pregnancy outcomes among racial and ethnic minority adolescents.
- Support routine collection of socioeconomic status data on adolescents who are sexually active, become pregnant, have abortions, and become parents.

Research:

- Support research on the factors that lead adolescents to engage in unprotected sexual intercourse.
- Support research on contraceptive technology, with an emphasis on technology that is appropriate for and acceptable for adolescents.
- Support efforts to determine how to incorporate adolescents' views in the design and evaluations of prevention efforts.
- Support research on why pregnant adolescents do not more frequently choose adoption as an option.
- Support research on why efforts to provide a comprehensive range of services to adolescent parents through case management and referral have found that *brokering* such services is difficult.

SOURCE: Office of Technology Assessment, 1991.

be distinguished from efforts that attempt either to prevent the occurrence of specific mental disorders or to restore the effective functioning of an individual with a major mental illness. Selected mental health promotion programs have demonstrated success in enhancing the coping skills of adolescents, their ability to function empathetically in social settings, and their academic performance, but few such programs have been implemented.

Concerns about mental health promotion and primary prevention interventions have arisen as some suicide prevention interventions have had unintended negative effects. Some observers have criticized the state of the art in prevention, asserting that primary prevention of mental disorders is not possible in most instances, because knowledge of causes and mechanisms of adolescent mental disorders is so limited (189). This criticism seems intended more to generate support for early treatment intervention for adolescents who show early signs of mental health problems than to suggest that some primary prevention and mental health promotion efforts may not be worthwhile.

Very few data are available on adolescents' utilization of or access to mental health services, but all evidence suggests that, although access has apparently increased, it is still very limited. One factor that affects adolescents' financial access to mental health treatment is the fact that Medicaid and many private, employment-based health insurers place limitations on reimbursement for mental health services that they may not place on services for physical problems. Such limitations include limitations on the number of visits, lifetime days of hospitalization, reimbursement levels, and the need to have a diagnosable disorder. In 1986, only half of adolescents' outpatient visits in organized mental health settings were covered by commercial health insurance or Medicaid (271).

Roughly half of the States have statutes that allow adolescents who meet certain requirements (e.g., minimum age of 16) to obtain outpatient and/or

Photo credit: Sasha Bruce Youth Network, Inc. Washington, DC

A major limit to adolescents' access to mental health services is the requirement by insurers that a person have a diagnosable mental disorder to be covered for services.

inpatient mental health services without parental consent. These statutes seem to reflect legislative concerns that a parental consent requirement might discourage some adolescents from seeking treatment for mental health problems because of a reluctance to reveal such problems to their parents. The statutes vary with respect to parental notification provisions, but the inpatient statutes are more likely to require or permit parental notification than the outpatient statutes.

Some people are concerned that increases in admissions to private inpatient mental health treatment facilities are indicative of widespread misuse of commitment to control troublesome minors (326). As a concomitant of the parental consent requirement, parents have sometimes been allowed to make a "voluntary commitment" of a minor child to a mental institution or facility regardless of the minor's desire or need for services. A few States have addressed this problem by requiring both the minor's consent and a parent's consent for such treatment.

Although increases in inpatient mental health care utilization are viewed by some as a sign of increasing accessibility of mental health treatment, such increases continue to cause concern in the absence of objective criteria for admission or rigorous evaluations demonstrating the effectiveness of such care.

Research is essential on the availability and effectiveness of standard providers and settings such as school guidance counselors, inpatient treatment and residential treatment care, and promising innovative treatments and approaches such as home-based care, crisis intervention services, therapeutic foster care, therapeutic group homes, transitional living, partial hospitalization (day treatment), and "wraparound" services.

For the most part, Federal engagement in child and adolescent mental health initiatives has not been strong or consistent, although there are continuing changes that hold promise for improvement. These include recent amendments to the State Comprehensive Mental Health Services Plan Act, recent requirements for studies related to the care of seriously emotionally disturbed children under the provisions of Public Law 94-142, and funding for the National Plan for Research on Child and Adolescent Mental Disorders. Support for clinical training has received little attention.

Specific options related to adolescents' mental health problems are presented in table 18.

Alcohol, Tobacco, and Drug Abuse (ch. 12)

In recent years, a great deal of national attention, concern, and effort has been centered on the problem of illicit drug use in American society. National survey data from adolescents (and adults (232, 263, 266)) suggest that considerable decline in the use of illicit drugs has been achieved, at least as self-reported by high school seniors and adolescents living in households (see figure 16). In addition, available information suggests that experimentation, regular use, and possibly problem use, of substances that are legally available to adults but not to minors—i.e., alcohol and tobacco—are considerably more prevalent among adolescents than is the use of illicit drugs (see figure 8 in "Major Findings"). This is not to deny the continuing impact of illicit drugs (and involvement in the illicit drug trade) on many adolescents, particularly those in some localities and with some other problems (e.g., school dropouts, homeless and runaway adolescents, incarcerated adolescents) (e.g., figure 12 in "Major Findings").

What causes adolescents to use and abuse alcohol, tobacco, and illicit drugs? Experimentation? family conflict? peer influences? adult modeling? advertising? Conclusions are difficult to draw because of

Table 18—Specific Options Related to Mental Health Problems (ch. 11)

Option 1: Improve adolescents' access to health and related services.[a]

- Have Medicaid and commercial insurers make health insurance as available for mental health problems as it is for "physical" problems.
- Support funding and treatment delivery approaches (e.g., "wraparound funding") by the Federal Government, States, localities, and other entities that respond to individual mental health treatment needs, rather than continuing to finance services tied to specific delivery sites.
- Support efforts to increase the availability of mental health services for adolescents in accessible settings (e.g., schools), including services for adolescents who do not yet have a diagnosable mental disorder.
- Support efforts to improve access to mental health treatment services for runaway and homeless, American Indian and Alaska Native, black, and poor adolescents.
- Assuming the development of strict criteria for admission and guidelines for practice, increase Medicaid reimbursement rates for psychiatric hospitalization; alternatively, mandate private psychiatric hospitals' participation in Medicaid.
- Support the implementation by schools and other settings (with accompanying rigorous evaluation) of mental health promotion interventions.
- Support the provision to adolescents of information about when to seek, and how to gain access to, mental health services.
- Increase support for the provision of adolescent-specific clinical training to a range of mental health providers.

Option 2: Support Federal data collection and research.

Data collection:

- Support the collection of data on the availability of and utilization of a broad range of mental health services likely to be used by adolescents (e.g., in primary health care, schools, juvenile justice, social services, and child welfare).

Research:

- Support independent research on the appropriateness of current diagnostic criteria for adolescent mental health programs.
- Support multisite research comparing the effectiveness of different mental health treatment settings and approaches to coordinating treatment (e.g., case management).
- Support the development of admissions criteria for mental health treatment, beginning with treatments in the most restrictive environments.
- Support further research on models of comprehensive services for emotionally disturbed adolescents and their families.
- Support a research study on the capability of adolescents to decide whether or not to accept mental health treatment.
- Encourage the Agency for Health Care Policy and Research (within DHHS) or a similar agency to develop practice guidelines for psychiatric hospitalization of adolescents.
- Provide sufficient support for the National Institute of Mental Health (within DHHS) to implement its National Plan for Research on Child and Adolescent Mental Disorders.

[a] Also see table 22, "Specific Options Related to the Delivery of Primary and Comprehensive Health Services to Adolescents," table 23, "Specific Options Related to Problems in Adolescents' Financial Access to Services," and table 24, "Specific Options Related to Concerns About Consent and Confidentiality in Adolescent Health Care Decisions."

SOURCE: Office of Technology Assessment, 1991.

methodological problems in the available research. Much of the research has not distinguished among substances and among levels of use in any meaningful way, and almost none of the research is longitudinal (i.e., research that follows individuals across time). Some research suggests that *problem use* of drugs and alcohol is likely to follow mental health problems. Research on the short- and long-term consequences of a range of levels of drug and alcohol use is scarce.

Extensive financial and human resources are being applied to preventing drug use among adolescents, although there is little information on the effectiveness of these efforts. The strategies that have been most successful in reducing, or at least delaying, substance use include life-skills decision-making programs, peer-led programs, and, for low-income adolescents, alternatives programs.[180] The generally unremarkable results of primary prevention programs do not necessarily imply that the efforts should be discontinued. Both the rigorously evaluated and not-so-rigorously evaluated programs may achieve other goals, such as improvements in social competence. However, it may be important to assess the impact of drug prevention programs in terms of these other outcomes. Otherwise, the programs may not be continued if they are found to be ineffective for drug abuse prevention or if resources are withdrawn from the war on drugs.

Concerns about the current substance abuse treatment system for adolescents include the lack of objective, standardized criteria for admission; potentially inadequate training and credentials for substance abuse treatment personnel; reliance on the addiction model; the absence of methodologically rigorous evaluations of treatment; and lack of access to early intervention.

Specific options related to alcohol, tobacco, and drug abuse problems among adolescents are presented in table 19.

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[180] *Alternatives programs* are programs that provide alternatives to life in the drug culture, such as recreation and sports programs and outward bound-type camping efforts.

AA
MEETING
WEDNESDAY
SATURDAY

Photo credit: Office of Technology Assessment

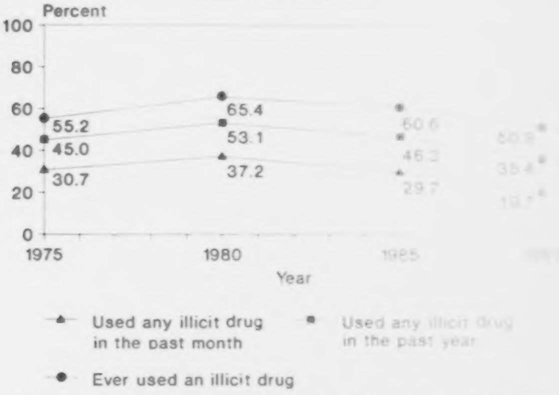
Substance abuse treatment that works well with adults may not be appropriate for adolescents.

Delinquency (ch. 13)

Existing data sources do not provide reliable and valid information on the extent of adolescent involvement in illegal behavior. Arrest data and victims' reports show a leveling off since their peak in the mid-1970s in adolescent arrest rates for serious violent offenses and a pronounced decline for serious property offenses (see figure 17). Unfortunately, though, there are worrisome increases in arrest rates for serious some specific violent offenses among adolescents. Since 1965, adolescent arrest rates for aggravated assault have shown a rather steady increase, and arrests for murder and nonnegligent manslaughter have increased since 1984 (see figure 18).

Another troubling trend is the narrowing gender gap in arrest rates, from 11.4 (males):1 (female) in 1965 to 7.5:1 in 1987 for serious violent offenses, and 6.7:1 to 3.6:1 over the same period for serious property offenses (303). The significance of these changes—whether they reflect an increase in serious offenses among female adolescents, manifest changing social views that permit or encourage police to

Figure 16—Trends in Illicit Drug Use by High School Seniors, 1975-89



SOURCE: U.S. Department of Health and Human Services, "1989 National High School Senior Drug Abuse Survey," *HHS News*, RPO689, Feb. 13, 1990.

CAUTION
MEN
Drinking
GETTING
LOADED
ZONE

Photo credit: Office of Technology Assessment

The social environment is thought to be an important influence on adolescents' alcohol, tobacco, and drug use.

Table 19—Specific Options Related to Alcohol, Tobacco, and Drug Abuse (ch. 12)

Option 1: Improve adolescents' access to health and related services.[a]

- Support efforts to improve access to early intervention (accompanied by rigorous evaluation) for adolescents who believe themselves at risk of substance abuse.
- Support early intervention for mental health problems (with rigorous evaluation to determine whether such intervention can prevent subsequent problem use of alcohol, tobacco, and illicit drugs).
- Encourage the Agency for Health Care Policy and Research (within DHHS) or some similar agency to develop practice guidelines and criteria for quality assessment for substance abuse treatment and treatment facilities for adolescents.
- Support expansion of Medicaid access to substance abuse treatment.

Health education:

- Support the provision to adolescents of information relevant to obtaining access to a range of substance abuse treatment options (from early intervention to inpatient treatment).

Option 2: Support Federal data collection and research.

Data collection:

- Expand support for local and more detailed surveys of drug and alcohol use and national surveys that oversample racial and ethnic minorities and a range of adolescents in different socioeconomic groups.
- Collect utilization data on the range of substance abuse treatment alternatives likely to be used by adolescents.
- Support inclusion of family income data in national and local surveys of drug use (e.g., through use of proxies such as street address); oversample low income, racial and ethnic minority adolescents.

Research:

- Support research to develop effective substance abuse prevention and early intervention efforts for additional high-risk adolescents (i.e., adolescents who work, adolescents with disposable income, homeless and runaway adolescents).
- Conduct research on the use of alternative (to self-report) measures of substance use.
- Support longitudinal research to enable the tracking of precursors and short- and long-term consequences of adolescent drug use.
- Support research that distinguishes between substance use, problem use, and abuse for adolescents and research that distinguishes clearly among different substances.
- Support research on development and evaluation of effective treatments for adolescents with substance abuse problems.

Option 3: Foster changes in adolescents' environments.

- Support a range of changes in the social environment that have been *associated* with lower rates of problem use of alcohol, tobacco, and illicit drugs, and may have other beneficial effects on adolescent health and well-being (e.g., reductions in parental drug use, higher levels of adult supervision, less contact with drug-using peers, perceptions of socially acceptable life options).

[a] Also see table 22, "Specific Options Related to the Delivery of Primary and Comprehensive Health Services to Adolescents," table 23, "Specific Options Related to Problems in Adolescents' Financial Access to Services," and table 24, "Specific Options Related to Concerns About Consent and Confidentiality in Adolescent Health Care Decisions."

SOURCE: Office of Technology Assessment, 1991.

arrest more female adolescent offenders, or result from some other factor—is not known.

As in the case of accidental deaths and suicides, firearms are a leading factor in adolescent homicide. Despite Federal legislation that prohibits the sale of rifles and shotguns until age 18, and handguns until age 21, almost 60 percent of adolescent offenders who committed homicide in 1988 used a firearm, compared to 53 percent in 1976 (302). In addition, the proportion of homicides involving adolescent victims has increased (see figure 4 in "Major Findings").[181]

Certain demographic characteristics—being in the age group 15 to 17, being male, and having access to an urban area—are more associated with serious delinquency than others. The relationship of race to delinquency is unclear. When one examines black and white adolescents' self-reports of serious offenses (1.5:1 in 1976 (58)), racial disparities are much smaller then those typically reported based on arrest statistics, where arrest rates for black adolescents far outnumber those for whites (3:1 in 1987 (300)). Furthermore, about half of black adolescents live in poor or near-poor families, many of them in urban areas typified by high rates of crime and limited educational or employment opportunities; and adolescents of low income and adolescents who live in urban areas are more likely to commit serious delinquent acts than other adolescents.

Early (preadolescent) involvement in socially disapproved behaviors, a number of family factors (e.g., lack of parental supervision), low intelligence (particularly poor verbal ability), and associating with delinquent peers have been identified as factors increasing the risk of serious adolescent delinquency; however, these factors also characterize a large proportion of adolescents who do not go on to become serious chronic delinquents. Thus, more comprehensive models that include individual, familial, and community factors, including community economic and social factors, and that are sensitive to interactions between an individual's age

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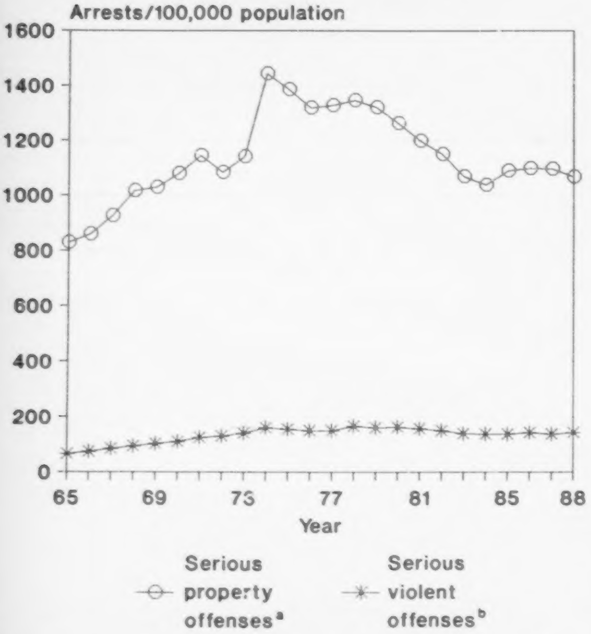
[181] Because of limitations in available data, OTA was not able to assess the ages of those who murdered adolescents.

Figure 17—Trends in Arrest Rates for Serious Property Offenses[a] and Serious Violent Offenses[b] by Persons Under Age 18, 1965-88



[a] *Serious property offenses* are specified offenses against property (i.e., burglary, larceny-theft, motor vehicle theft, and arson).

[b] *Serious violent offenses* are specified violent offenses against a person (i.e., murder and nonnegligent manslaughter, forcible rape, robbery, and aggravated assault).

SOURCE: Office of Technology Assessment, 1991, based on U.S. Department of Justice, Federal Bureau of Investigation, *Age-Specific Arrest Rates and Race-Specific Arrest Rates for Selected Offenses 1965-1988* (Washington, DC: April 1990).

and his or her risk, are needed to explain and predict delinquency.

Despite incomplete knowledge about the causation of adolescent delinquency, some programs designed to prevent delinquency, while not widely duplicated or tested, have shown promising results in relatively rigorous studies. Overall, successful approaches to prevention can be characterized as those that have the following characteristics:

- they are appropriately supportive of children and adolescents and their families;
- they are intensive (i.e., they involve the commitment of considerable time, personnel, and effort); and
- they are broad-based (i.e., they intervene in a number of the systems (including family, school, and peer) in which the child or adolescent is involved, and use multiple services (e.g., educational, health, and social) as appropriate for the individual child or adolescent).

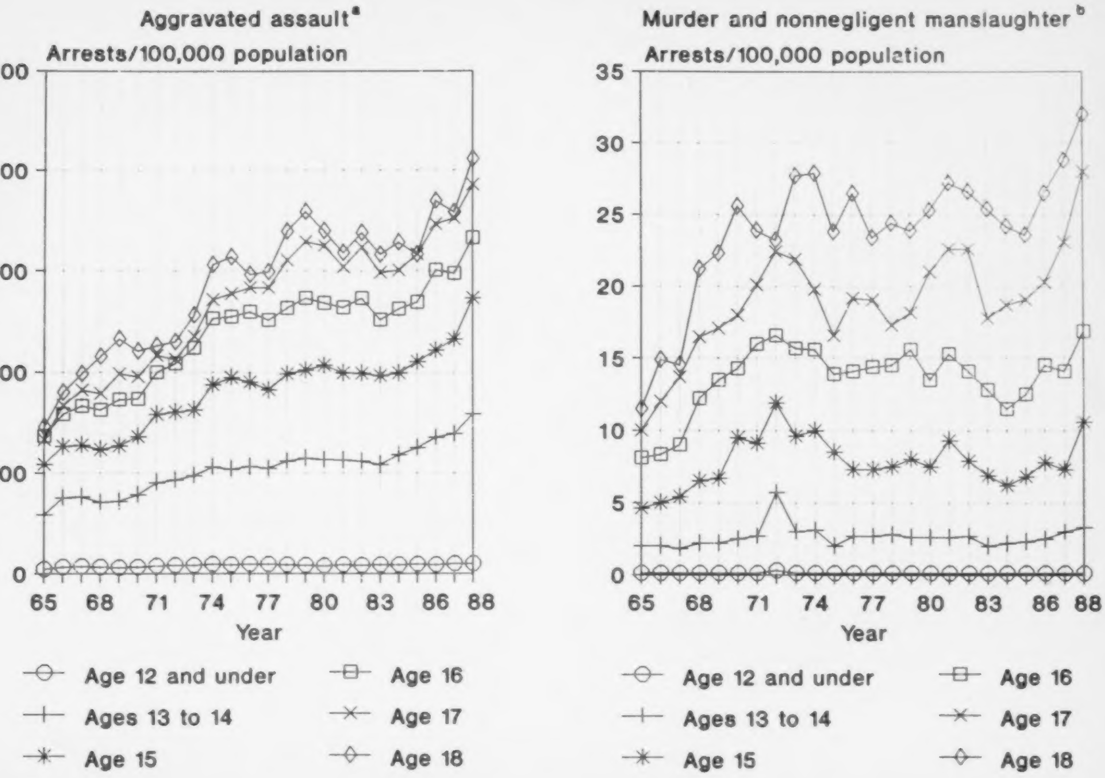
The most promising *primary* prevention efforts appear to be conducted early in life for high-risk children, such as the Perry Pre-School Program and a broad-based prevention intervention that included parent-skill training. Promising *secondary* prevention approaches, conducted during adolescence after antisocial behavior has become apparent, include the intensive psychotherapeutic and education/job placement intervention evaluated by Shore and his colleagues and the integration of identified antisocial adolescents into activities with nondisturbed peers. These models deserve additional implementation accompanied by rigorous evaluation.

Also in need of attention as preventive factors are limits on access to firearms and educational interventions intended to help adolescents avoid becoming victims. The role of firearms in delinquency has not been well researched, but it is clear that the use of guns can exacerbate the outcome of violent delinquent and adult criminal acts.

There are conflicts inherent in the multiple goals of the juvenile justice system: rehabilitation, punishment, deterrence, and public safety. In recent years, society has apparently taken a more punitive approach to dealing with adolescents who commit delinquent acts; however, increases in juveniles held in public facilities have occurred only for nonwhites. Nearly 40 percent of adolescents in State-operated juvenile detention facilities are black; 15 percent are Hispanic (see figure 19). Between 1985 and 1987, the number of black and Hispanic juveniles increased 15 percent and 20 percent, respectively.

Almost nothing is known about the effectiveness of the current juvenile justice system as it normally operates in reducing subsequent delinquency among adolescents. It is clear that health care for adolescents in juvenile confinement is a serious cause for concern, in part because incarcerated adolescents have a greater than average number of health problems and in part because health problems often increase during confinement. One oft-cited impediment to improving access to health services is the Federal regulation that prohibits Medicaid payment for health services provided within correctional facilities. In addition, only 32 of the more than 3,000 eligible facilities have been accredited as meeting

Figure 18—Trends in Arrest Rates for Aggravated Assault[a] and Murder and Nonnegligent Manslaughter[b] by Persons Age 18 and Under, 1965-88



[a] *Aggravated assault* is an unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury. This type of assault usually is accompanied by the use of a weapon or by means likely to produce death or great bodily harm.

[b] *Murder and nonnegligent manslaughter* refer to the willful (nonnegligent) killing of one human being by another. Note that the scale is different from that for aggravated assault, in order to show the recent increases.

SOURCE: Office of Technology Assessment, 1991, based on U.S. Department of Justice, Federal Bureau of Investigation, *Age-Specific Arrest Rates and Race-Specific Arrest Rates for Selected Offenses 1965-1988* (Washington, DC: April 1990).

existing voluntary standards for providing health care.[182]

Executive branch support for the lead Federal agency in juvenile justice and delinquency prevention, the Office of Juvenile Justice and Delinquency Prevention in the U.S. Department of Justice, has declined, and the agency currently provides little support for prevention of delinquency. Some have suggested that Federal efforts concerning delinquency be returned to the U.S. Department of Health and Human Services. At the least, an in-depth analysis of Office of Juvenile Justice and Delinquency Prevention activities seems warranted.

Adolescents and young adults (ages 11 to 24) are the age group most likely to be the *victims* of theft, rape, robbery and assault (see figure 9, in "Major Findings"). These data suggest the need for educating adolescents about how to avoid becoming victims, including becoming victims of actions by other adolescents.

Specific options related to delinquency problems among adolescents are presented in table 20.

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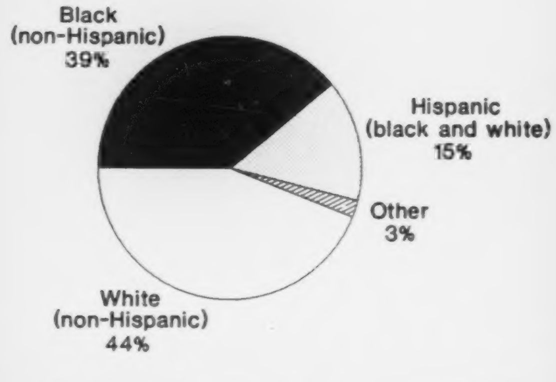
[182] It is not known how many of the nonaccredited facilities either applied for accreditation and were turned down, or did not apply for accreditation. In any event, standards remain strictly voluntary.

Figure 19—Distribution of Juveniles in Custody in Public Juvenile Facilities by Racial and Ethnic Group, 1987[a] [b]



[a] Based on single-day census count (see ch. 13, "Delinquency: Prevention and Services," in Vol. II, for explanation). The total population in public juvenile facilities on census day in 1987 was 53,503.

[b] Public juvenile facilities include institutional facilities and open facilities. They also include short-term facilities and long-term facilities. According to the Office of Juvenile Justice and Delinquency Prevention, the vast majority (91 percent) of admissions to public juvenile facilities in 1987 were to institutional rather than open facilities; 67 percent of admissions to public juvenile facilities were to long-term facilities and 33 percent were to short-term facilities.

SOURCE: Office of Technology Assessment, 1991, based on U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention, "Children in Custody: Public Juvenile Facilities, 1987," *Juvenile Justice Bulletin*, October 1988.

COUNTY OF FAIRFAX
JUVENILE HOLDING FACILITY

Photo credit: Office of Technology Assessment

The health care of adolescents in juvenile confinement is a serious cause for concern, because adolescents in confinement have a greater than average number of health problems, because their health problems may increase during confinement, and because only 1 percent of eligible juvenile justice facilities have been accredited as meeting existing voluntary standards for providing health care.

Homelessness (ch. 14)

Homelessness is one of the riskiest situations for adolescents. In addition to behaviors and conditions associated with homelessness that may present a risk to future health (e.g., engaging in survival sex[183]), available evidence suggests that adolescents who are homeless with their families or on their own (i.e., runaways and "thrownaways"[184]) are likely to already suffer disproportionately from health problems. Efforts to address the needs of substance-abusing parents, prevent child abuse, provide counseling for families about gay sexual orientations, and provide supportive interventions for adolescents in foster families and institutions may be appropriate strategies for preventing adolescents from running away from home. Different approaches are needed to prevent homelessness among families with adolescents.[185]

For those adolescents who are already homeless, providing shelter is a necessary, but not sufficient, intervention. Until recently, Federal programs to serve the needs of homeless adolescents on their own have been limited primarily to temporary (2-week) shelter. Funds for the transitional living programs authorized by Public Law 100-690 were not appropriated until fiscal year 1990, and pro-

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[183] "Survival sex" is engaging in sexual intercourse in exchange for food, shelter, money, or drugs.

[184] "*Thrownaways*" are adolescents who have been asked or told to leave home by parents or guardians. Runaways may also leave because they perceive that they are not wanted, in many cases apparently because they have been abused.

[185] The Stewart B. McKinney Homeless Assistance Act Amendments of 1990 (Public Law 101-645) provided for grants for demonstration programs intended to prevent homelessness among families with children (Subtitle F, Family Support Centers); $50 million for fiscal year 1991 and $55 million for fiscal year 1992 was authorized for a total of 30 competitive grants.

Table 20—Specific Options Related to Delinquency (ch. 13)

Option 1: Improve adolescents' access to health and related services.
- Change Federal regulations so that adolescents in correctional facilities are eligible for Medicaid.
- Support the development of Federal quality standards for health care in juvenile justice facilities and mandate that all juvenile justice facilities meet the standards.

Option 2: Support Federal data collection and research.

Data collection:
- Support the regular collection of self-report data on a range of adolescent offenses for a range of ages.
- Support the collection of standardized data on adolescent offenders' social adjustment (e.g., recidivism) following their release from juvenile facilities.

Research:
- Support research on appropriate evaluation methods for delinquency prevention.
- Support evaluation research in delinquency prevention and treatment.
- Support research on ways to prevent the commission of violence by adolescents and the victimization of adolescents.
- Support research on effective rehabilitative treatment approaches to juvenile offenders in the community rather than institutions.
- Support an objective examination of the placement, mission, and accomplishments of the Office of Juvenile Justice and Delinquency Prevention (currently in the U.S. Department of Justice).

Option 3: Foster changes in adolescents' environments.
- Support early intervention programs that provide comprehensive care to families.

SOURCE: Office of Technology Assessment, 1991.

grams were not initiated until October 1990.[186] Important service needs include access to education and employment training, AIDS/HIV infection prevention and education, mental health counseling, training in independent living, and other health services.

Specific options related to homelessness among adolescents are presented in table 21.

Photo credit: Sasha Bruce Youth Network, Inc., Washington, DC

Homeless adolescents have needs for interventions that go beyond their need for shelter.

Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents (ch. 15)

Adolescents are relatively unlikely to use the services of private office-based primary care physicians, having the lowest rate of use of any age group (see figure 20). About one-quarter of adolescents' visits to private office-based physicians are to pediatricians, two-fifths are to general and family practice physicians (35 percent) or internists[187] (5 percent), and the rest are to specialists (287) (see figure 21).

Given that adolescents clearly have health problems that would benefit from care, a number of nonfinancial and nonlegal reasons[188] why adolescents might exhibit relatively low utilization of the services of primary care physicians and, to some

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[186] *Transitional living programs* are structured programs that provide shelter while helping young people develop the skills they need to live on their own. For fiscal year 1990, $9.867 million was appropriated and $9.939 million for fiscal year 1991 in the form of grants (156). Grantees are required to submit annual reports to DHHS on their activities and achievements and statistical summaries describing the number and characteristics of the homeless youth served by the transitional living programs (42 U.S.C. 5714-2). An evaluation is scheduled to begin in late 1991. Programs are limited to adolescents and young adults between ages 16 and 21. The Young Americans Act, described above, also allows for (but does not require) grants to be made for transitional living services to young individuals who are homeless, with no age restriction specified (Public Law 101-501, Title IX; 42 U.S.C. 12338).

[187] *Internists* are physicians practicing in general internal medicine. Internal medicine in the United States differs from family practice mainly in not providing extensive training for pediatric and obstetric care and in providing more experience with severe and complex illness (324). Internal medicine differs from the subspecialties that have developed out of internal medicine (e.g., cardiology, oncology, hematology) by offering primary care, including first contact care and referrals to subspecialists when warranted (196, 324).

[188] Financial issues in access are discussed in ch. 16, "Financial Access to Health Services," in Vol. III. In addition, the reasons for the relative lack of physician interest in adolescent health care may be related to the relatively low level of financial remuneration associated with the intensive level of cognitive services that are needed by adolescents (see "Barriers and Opportunities to Change," below).

Table 21—Specific Options Related to Homelessness (ch. 14)

Option 1: Improve adolescents' access to health and related services.

- Increase support for contraceptive, prenatal care, STD, mental health, and substance abuse treatment, and legal services intended to help adolescents who are homeless alone or with their families.
- Continue to support, with appropriate evaluation, supervised transitional living for homeless adolescents, with access to a range of supportive services (health, education, employment, training).
- Support outreach efforts to help homeless and runaway adolescents gain access to comprehensive health services.

Option 2: Support Federal data collection and research.

Data collection:

- Support systematic collection of data on the physical health, mental health, and other needs of homeless and runaway adolescents.

Research:

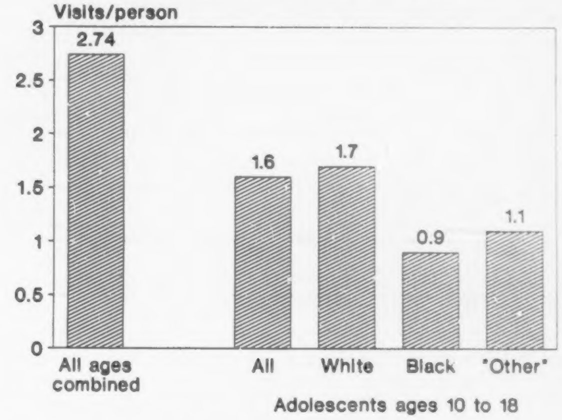
- Support rigorous research on what causes adolescents, including white, middle-class, and gay adolescents, to run away from their families.

Option 3: Foster changes in adolescents' environments.

- Increase mental health support for families (e.g., family counseling).
- Expand housing and income support for homeless families with adolescents and for families with adolescents who are at high risk of homelessness.

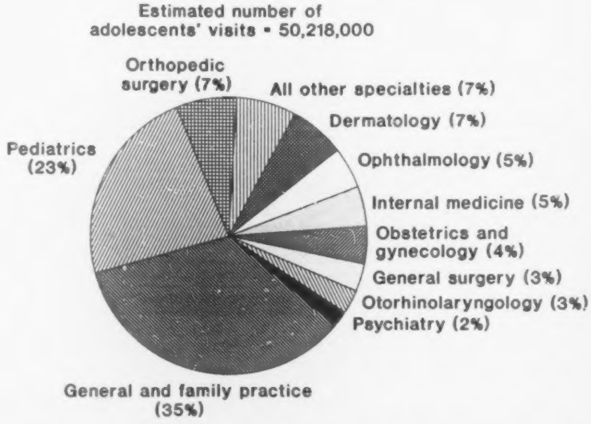
SOURCE: Office of Technology Assessment, 1991.

Figure 20—Visits to Private Office-Based Physicians by U.S. Citizens, All Ages Combined and U.S. Adolescents Ages 10 to 18, 1985



SOURCE: Office of Technology Assessment, 1991, based on U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, unpublished data from the 1985 National Ambulatory Medical Care Survey, Hyattsville, MD, 1989.

Figure 21—Distribution of Visits to Private Office-Based Physicians by U.S. Adolescents Ages 10 to 18, by Physician Specialty, 1985[a]



[a] Percentages may not add to 100 because of rounding.

SOURCE: Office of Technology Assessment, 1991, based on U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, unpublished data from the 1985 National Ambulatory Medical Care Survey, Hyattsville, MD, 1989.

extent, other health care providers,[189] have been examined. They include: the lack of availability and willingness of physicians to treat adolescents; inconsistencies between adolescents' perceived needs and the care provided by physicians; adolescents' concerns about confidentiality; and physicians' and other health care providers' lack of competence to identify and treat the health problems of adolescence.

Generally, however, there is little empirical research on the extent to which physicians and other health care providers meet the needs of adolescents. In some instances, the needs or desires of adolescents (e.g., for confidentiality of care, for certain issues to be discussed during a health care visit) may conflict with the requirements of laws pertaining to the allocation of authority in health care decisionmaking,[190] with the needs of health care providers to be paid, with the advisability of family (parental) involvement in the health care experience, and with overall societal perceptions of which health care

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[189] Most of the available research on adolescents' utilization patterns and experiences with health care providers has focused on physicians as providers. Further, most of the research on physicians has focused on pediatricians as providers of adolescent health care.

[190] See ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III.

Photo credit: Joe Sanders/American Academy of Pediatrics

Adolescents' needs or desires for confidentiality of care may conflict with laws pertaining to the allocation of authority for health care decisionmaking.

problems are important. Nevertheless, available evidence clearly suggests that the needs of adolescents—both those defined by adolescents and, to some extent, defined by society—are not being met by the contemporary mainstream primary health care system.

The number of health care providers with both interest and special skills in providing health care to adolescents is not known, but available data suggest that the number is quite small (perhaps 5,500).[191] With the exception of the small group of specialists in adolescent medicine, there is no group of health care providers who are available, clearly defined as appropriate, and clearly willing to provide care to adolescents. For example, despite the potentially increased importance of "anticipatory guidance" during the adolescent years, pediatricians have been found to spend an average of approximately 1 minute more with adolescents than they do with other noninfant patients (90); one study suggests that an average of 7 seconds a visit is spent on anticipatory guidance (176). More rigorous (e.g., direct observational) studies and surveys of adolescents themselves finding that little time is spent discussing the "new morbidities" issues that are believed to be amenable to preventive educational interventions or the health concerns of importance to adolescents themselves (126,176).

Findings concerning physicians' attitudes and behavior with respect to confidentiality of care for adolescents are both limited and variable, with 75 percent of members of The Society for Adolescent Medicine and a random sample of pediatricians expressing support for confidentiality for adolescent patients (124), but a survey using a specific example (a pregnant 15-year-old's desire that her mother not be told of the pregnancy) finding that the majority of physicians would not abide by the patient's request for confidentiality (161).

The very small body of empirical work, much of it methodologically limited, that has explored the issue of health care provider competence in diagnosing and treating adolescents' specific problems, suggests the following:

- primary care physicians appear to have difficulty in identifying children and adolescents who have behavioral and emotional problems;
- physicians as a group are currently not able to identify substance abuse problems very effectively;
- primary care physicians appear able to identify acne in adolescent patients, but their ability to treat acne has not been tested;
- hospital services do not appear to adequately document health problems in adolescent patients; and
- physicians, nurses, social workers, psychologists, and nutritionists all consider themselves relatively untrained in important areas of adolescent health (e.g., sexuality, handicaps, endocrine problems, contraception, psychosocial concerns).[192]

Almost no work has been conducted on the important issue of providers' abilities to interact with adolescents, regardless of the specific problems that an adolescent may have. However, the studies that have been conducted suggest that important characteristics include friendliness, understanding, and willingness to take one's time (11,122). One study suggests that advanced training in adolescent health care improves adolescent patient satisfaction (122).

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[191] OTA was able to estimate that there are perhaps 2,000 nonpsychiatrist physician specialists in adolescent medicine; 1,500 psychologists who have reported adolescents to be their primary professional interest; 1,500 members of the American Society for Adolescent Psychiatry; and 370 members of the North American Society for Pediatric and Adolescent Gynecology. In addition, health care providers that may be likely to treat adolescents and receive some special training include family physicians, pediatric nurse-practitioners, nurse midwives, school nurses, health educators, and social workers. However, none of these groups ascertain the extent of specialized professional interest in adolescents as opposed to other age groups.

[192] Issues related to the role of emergency personnel who come in contact with adolescents (e.g., those who have been in accidents, been assaulted, or attempted suicide) are discussed in ch. 5, "Accidental Injuries: Prevention and Services," in Vol. II.

Perhaps more disturbing than findings that many health care providers are apparently not able to treat adolescents, several studies have found that health care providers have expressed relatively little interest in additional training. Further, except for those who explicitly specialize in adolescent health care, existing training requirements with respect to adolescents, while improving, are minimal.[193] Thus, **those adolescents who seek health care are likely to see providers who have not been specially trained to work with them.** There is minimal Federal support for clinical training in adolescent health and almost no systematic information on the desirable features of training in adolescent health care.

Given the apparent failure of both the primary health care system and the specialty health care systems to meet the health care needs of adolescents, several innovations in health care delivery have been attempted. These include the provision of comprehensive health (and, sometimes, related) services by an interdisciplinary team of health care providers at a single site (e.g., hospital-based adolescent health care clinics, community-based adolescent health care clinics, a teen center at an HMO, "free clinics," multiservice centers, and, most extensively, school-linked health centers), attempts to integrate services, and efforts to involve adolescents in health services planning and management.

Systematic evidence of the effectiveness of comprehensive programs in terms of improving health *outcomes* is scarce. The only study to date that compared special hospital-based adolescent health clinics to hospital-based clinics without a special adolescent focus found no outcome differences after a year (54). However, the specially funded clinics were more successful in getting adolescents to disclose behavioral and lifestyle problems to their clinical providers, and consequently to obtain care for such problems (54). Reductions in school absenteeism, alcohol consumption, smoking, sexual activity, and pregnancy have been found in some schools with on-site school-linked health centers, though not consistently (105,339). In general, assessments of the effectiveness of specialized comprehensive adolescent health care services (whether school-linked, hospital-based, health maintenance organization-based, or freestanding) have been few and methodologically limited. In addition, given the socially embedded nature of many adolescent health problems, the capacity of any clinical program *in and of itself* to completely alleviate the problems of adolescents may be limited.

What has often been found is that many of the adolescents who use the services of school-linked health centers are adolescents who have no other source of health care,[194] and that adolescents use school-linked health centers for typical urgent care for illness and injuries and for services otherwise unavailable without high levels of income, generous insurance policies, or breaches of confidentiality (e.g., mental health counseling, reproductive health care[195]). Further, one of the few systematic studies of school-linked health centers suggests that efforts to meet the more intangible needs of adolescents have been successful: the primary reasons cited by students for using the school-linked health center in their school were that users felt they could trust it because it was part of the school; the school-linked health center was easy to get to; and the staff was caring (105). The number of repeat visits to school-linked health centers is also cited as suggestive that school-linked health centers are responsive to the needs of adolescents as they perceive them (180).

When it comes to adolescents, then, school-linked health centers and, perhaps to a lesser extent, community- and health-care-organization-based adolescent health care centers, appear to respond to many of the shortcomings of the traditional health care system: Such centers attempt to provide comprehensive services that address the range of problems that many adolescents face (e.g., care for acute physical illnesses; general medical examinations in preparation for involvement in athletics; mental health counseling; laboratory tests; reproductive health care; family counseling; prescriptions; educational services; vocational training; legal assistance; recreational opportunities; advocacy; coordination

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[193] For example, a structured experience in adolescent health became a required aspect of training for future pediatricians in January 1990, although no patient age range nor duration of training was specified. Neither family practice nor internal medicine include specific curricula regarding adolescents.

[194] This finding is confounded somewhat by the fact that most school-linked health centers have been purposefully situated in communities deemed to be medically underserved.

[195] Apparently because they wish to avoid delays in implementing the broader range of services that are needed, most school-linked health centers do not provide contraceptive methods on site.

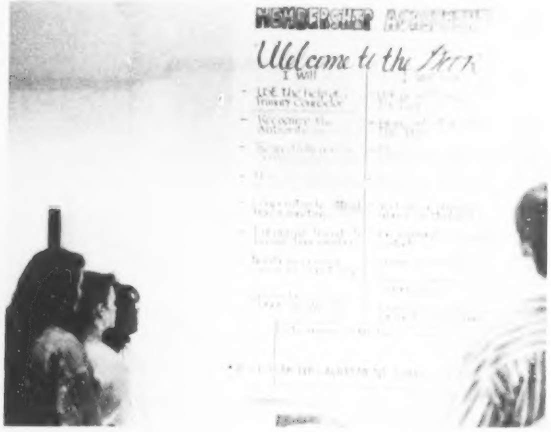

Photo credit: Katherine Criss, New York, NY

Comprehensive health centers for adolescents attempt to provide services that address the range of problems many adolescents face. Such services include care for acute physical illnesses, general medical exams, reproductive health care, mental health counseling, family counseling, vocational training, recreational opportunity, and child care services.

Photo credit: Bethesda-Chevy Chase Rescue Squad

Congress could support research aimed at evaluating, and if necessary could support improvements in, training of health care providers who work with adolescents.

of care (e.g., with school personnel); advocacy[196]). Settings are often designed with adolescents in mind, to the extent possible. Adolescents are often involved in the design and management of the programs. In the case of school-linked health centers, the services are physically accessible, because they are located in or near where most adolescents spend much of their waking day.

However, there are certain ways in which school-linked health centers and other specialized adolescent health care programs reflect some of the limitations of the mainstream primary health care system and can be strengthened.

For a variety of reasons, a reorganization of adolescent health services to meet desirable criteria for adolescent health services has not been realized. The reasons are both formidable and interrelated. They include community resistance to the provision of contraceptive services and abortion counseling to adolescents; resistance of organized medicine; resistance by schools to adding yet another responsibility to the educational infrastructure; lack of a core of adequately trained professionals to staff comprehensive programs; State Medicaid administrative barriers; lack of conclusive and convincing data on the effectiveness of such programs in reducing a number of highly socially visible adolescent health problems; and, finally, lack of financing.

Major options related to the delivery of primary and comprehensive health services were discussed earlier in this chapter. Additional options are presented in table 22.

Problems in Adolescents' Financial Access to Health Services (ch. 16)

One out of seven adolescents, 4.6 million overall, are without a key ingredient to access to health care: health insurance coverage. This includes one out of three poor adolescents who are not covered by the Medicaid program. Adolescents in Southern states are the most likely to be uninsured.

There is increasingly worrisome evidence that escalating health insurance costs are threatening coverage of adolescents and other dependents of the working insured. Faced with rising costs of health insurance, some families are choosing not to cover their dependents. Some employers plan to cut benefits for dependents, in particular mental health and substance abuse treatment benefits.

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[196] Not all services are available at all centers.

Table 22—Specific Options Related to the Delivery of Primary and Comprehensive Health Services to Adolescents (ch. 15)

Option 1: Improve adolescents' access to health and related services.[a]

Option 2: Support Federal data collection and research.

Data collection:

- Support the collection of data on the Federal (within the Bureau of Maternal and Child Health, Health Resources and Services Administration, Public Health Service, U.S. Department of Health and Human Services) interdisciplinary training program in adolescent health care.

Research:

- Support research aimed at improving adolescent-provider interactions, including research on diverging perceptions of adolescent health care needs.
- Support research aimed at evaluating and, if necessary, improving the content of training for adolescent health care providers across a broad range of disciplines (medicine, psychology, social work, health education, nursing).
- Support research aimed at improving referrals among systems of care.
- Support research on a range of alternative delivery mechanisms for adolescent health and related services.
- Support research on the question of what "comprehensive" and integrated means (and should mean) in the delivery of health and related services for adolescents.

[a] See Major Option 1 related to improving adolescents' access to health and related services that was presented in table 5.

SOURCE: Office of Technology Assessment, 1991.

Photo credit: March of Dimes Birth Defects Foundation

Congress could amend the Pregnancy Discrimination Act of 1978 (Public Law 95-555) to close the loophole that allows employers not to cover prenatal and maternity care for adolescent daughters of employees covered by their health benefit plans.

Even those adolescents with health insurance coverage may not be eligible to receive the services they most need. Most private health insurance plans do not cover many of the important needs of adolescents, including basic dental, hearing, vision, and maternity-related benefits. Mental health and substance abuse treatment benefits are universally subject to separate and more stringent limitations than for "physical" problems. Preventive services are generally not covered for adolescents unless they belong to a health maintenance organization.[197] Little is known about the extent to which private health insurance reimburses the nonphysician health care professionals who could be critical to the development of additional low-cost community adolescent health care resources. Physician participation in Medicaid is particularly low among two specialties of special importance to adolescents: gynecologists and psychiatrists.

OTA finds that a combination of two proposals for increasing coverage (an expansion in Medicaid to cover all poor adolescents, and a requirement that employers provide health benefits to all workers (and their families) working at least 30 hours weekly) would insure approximately 78 percent of uninsured adolescents. Even if appropriate benefits are available, however, adolescents who are concerned about confidentiality may be reluctant to seek care from providers if their private health plan requires parents to submit a claim for reimbursement (as most do), or present a parent's Medicaid card to obtain services. And providing "basic" coverage does not ensure that all adolescent health care needs would be met.

Several strategies related to improving adolescents' financial access to health services were presented in conjunction with Major Option 1 (see table 5). Additional options are presented in table 23.

Consent and Confidentiality Issues (ch. 17)

Parental consent and notification requirements pose a significant barrier to some adolescents' access to certain health services. Under common law, a minor cannot receive health services without parental consent. State courts and legislatures, as well as the U.S. Supreme Court,[198] have carved out various types of exceptions to the parental consent requirement (e.g., for emancipated minors, for emergency health services, for services related to the treatment of STDs, and for family planning and abortion services),[199] but the exceptions vary widely from State to State and frequently vary for different types of services within a State. In carving out exceptions to the parental consent requirement, State courts and legislatures have sometimes—though not always—replaced the parental consent requirement with a parental notification requirement. Courts and legislatures seem to regard parental notification requirements as less burdensome for adolescents than parental consent requirements, but it is not clear that adolescents who are in conflict with their parents make this distinction.

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[197] It is important to note that a previous report by OTA found no evidence that well-child care visits beyond those necessary for immunizations were cost-effective (225). OTA's 1988 report emphasized well-child care prior to adolescence. The current Report did not conduct a cost-effectiveness or effectiveness analysis of the literature on well-child care visits for adolescents. However, other attempts to do so have found no evidence that any particular periodicity schedule is warranted by existing evidence on effectiveness (see especially, 319).

In the case of family planning and abortion services, studies have found that parental consent and notification requirements pose a significant barrier to adolescents' access to and utilization of services. Quite probably, such requirements also pose similar barriers to adolescents' access to other types of services (e.g., mental health treatment, drug abuse treatment, alcohol abuse treatment).

Parental consent and notification requirements appear to be based on various rationales. One is that such requirements foster the stability and cohesiveness of the family, something in which the state has a legitimate interest, by bolstering family autonomy and parental authority. Another is that minors as a class are incompetent to give informed consent to health care or to enter into contracts with physicians. Little empirical research has been done on the competence of minors to give informed consent to health care. The research that has been done suggests, but not conclusively, that adolescents ages 14 and older may have the capacity for informed consent. This empirical research is consistent with findings on cognitive development during adolescence.[200] More research on adolescent participation in health care decisionmaking would be useful in helping to inform considerations of what, if any, changes would be appropriate in current State and other laws and regulations governing consent and confidentiality.

Table 23—Specific Options Related to Problems in Adolescents' Financial Access to Health Services (ch. 16)[a]

Option 1: Improve adolescents' financial access to health and related services.

- In considering any potential Medicaid physician payment reform that results from the Physician Payment Review Commission's OBRA-89-mandated effort to examine the adequacy of physician payment, physician participation, and access to care by Medicaid beneficiaries, give high priority to providers involved in direct service to adolescents.
- Amend the Pregnancy Discrimination Act of 1978 (Public Law 95-555) to close the loophole that allows employers not to cover prenatal and perinatal (maternity) care for adolescent daughters of employees in their health benefit plans.
- Support private and public insurance coverage of nurse practitioners and clinical nurse midwives and other nonphysician providers to boost the availability of personnel to treat adolescents and promote the financial viability of school-linked health centers and other adolescent health centers designed to provide services to adolescents.[b]
- Encourage the U.S. executive branch, a congressional agency, or an independent nongovernmental entity to fund a study to determine the elements of a model health insurance benefit for adolescents.

[a] Also see Major Option 1 related to improving adolescents' access to health and related services that was presented in table 5.

[b] These personnel may need adolescent-specific training. See table 22, "Specific Options Related to the Delivery of Primary and Comprehensive Health Services to Adolescents."

SOURCE: Office of Technology Assessment, 1991.

Given the array of laws pertaining to consent and confidentiality that currently exist, adolescents—and perhaps even providers—are understandably confused about how these laws pertain to them as individuals. If it chose to, Congress could intervene to reduce these uncertainties by moving Federal and State laws in the direction of greater uniformity. Another way of reducing adolescents' uncertainties might be to encourage States, localities, and schools to integrate information about the legal aspects of access to health services in health education courses for adolescents.

Several strategies related to improving adolescents' legal access to health services were discussed

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[198] Laws related to the allocation of authority for decisions about the provision of health services to minors have historically been the province of State legislatures, State courts, and State administrative agencies, but the U.S. Supreme Court decides whether State laws comport with the U.S. Constitution.

[199] The exceptions tend to fall into four categories: 1) exceptions for abused and neglected minors; 2) exceptions for emancipated, independent, or mature minors; 3) exceptions for health emergencies; and 4) exceptions for specific health problems and services (e.g., services related to sexual activities, to drug and alcohol abuse treatment, and to mental health treatment).

[200] See ch. 2, "What Is Adolescent Health?" in Vol. II.

Table 24—Specific Options Related to Concerns About Consent and Confidentiality in Adolescent Health Care Decisions (ch. 17)

Option 1: Improve adolescents' legal access to health and related services.[a]

Option 2: Support Federal data collection and research related to the allocation of authority for adolescent health care decisions.

- Support further research on adolescents' capacities to make various types of health care decisions, taking into account factors such as age, prior experience, situational factors, and intelligence.
- Support further research to determine the extent to which, and under what circumstances, parental consent and notification requirements create barriers to adolescents' access to services other than family planning and abortion services (e.g., treatment for sexually transmitted diseases, outpatient mental health services, substance abuse treatment).
- Support research to determine the extent to which parental prerogatives to hospitalize their children for mental health or substance abuse problems causes harm to the adolescents.

[a] See Major Option 1 related to improving adolescents' access to services that was presented in table 5.

SOURCE: Office of Technology Assessment, 1991.

in conjunction with Major Option 1 (see table 5). Additional options are presented in table 24.

Issues in the Delivery of Services to Special Groups of Adolescents (ch. 18)

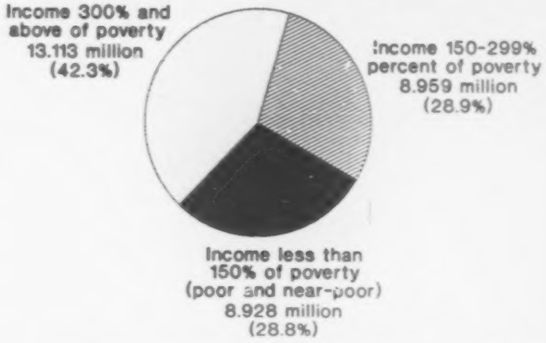
Certain groups of adolescents—adolescents living in poverty, racial and ethnic minority adolescents, and adolescents living in rural areas—experience health problems at disproportionate rates and face barriers to health care because of lack of financial resources, limited local availability of resources, or other factors.

Poor Adolescents

In 1987, nearly one-third of U.S. adolescents lived in families with incomes that did not exceed 150 percent of the Federal poverty level (see figure 22). One of the primary determinants of whether an adolescent was living in poverty was living arrangement. Adolescents who were living with both parents or with their father were far less likely to be living in poor families than were adolescents living with their mother only or adolescents living on their own (see figure 23).

The effects of growing up poor are complex and not well understood (152). It is well known, however, that children growing up in poverty confront more risk factors and benefit from fewer protective and supportive factors than their more advantaged peers. Among the risk factors that many (though not all) poor children confront are a highly stressed and disorganized family environment, dilapidated housing, substandard schools, and often, especially in inner cities, dangerous, blighted neighborhoods where crime and violence seem to have become the norm (74). Access to health care for poor adolescents appears to be limited, based on utilization data and known barriers to access (e.g., low physician participation in Medicaid, problems with transportation, lack of services in poor areas). Yet although the rates of many health and related problems (e.g., days of

Figure 22—Socioeconomic Status of U.S. Adolescents Ages 10 to 18, by Family Income as a Percent of the Federal Poverty Level, 1987[a]



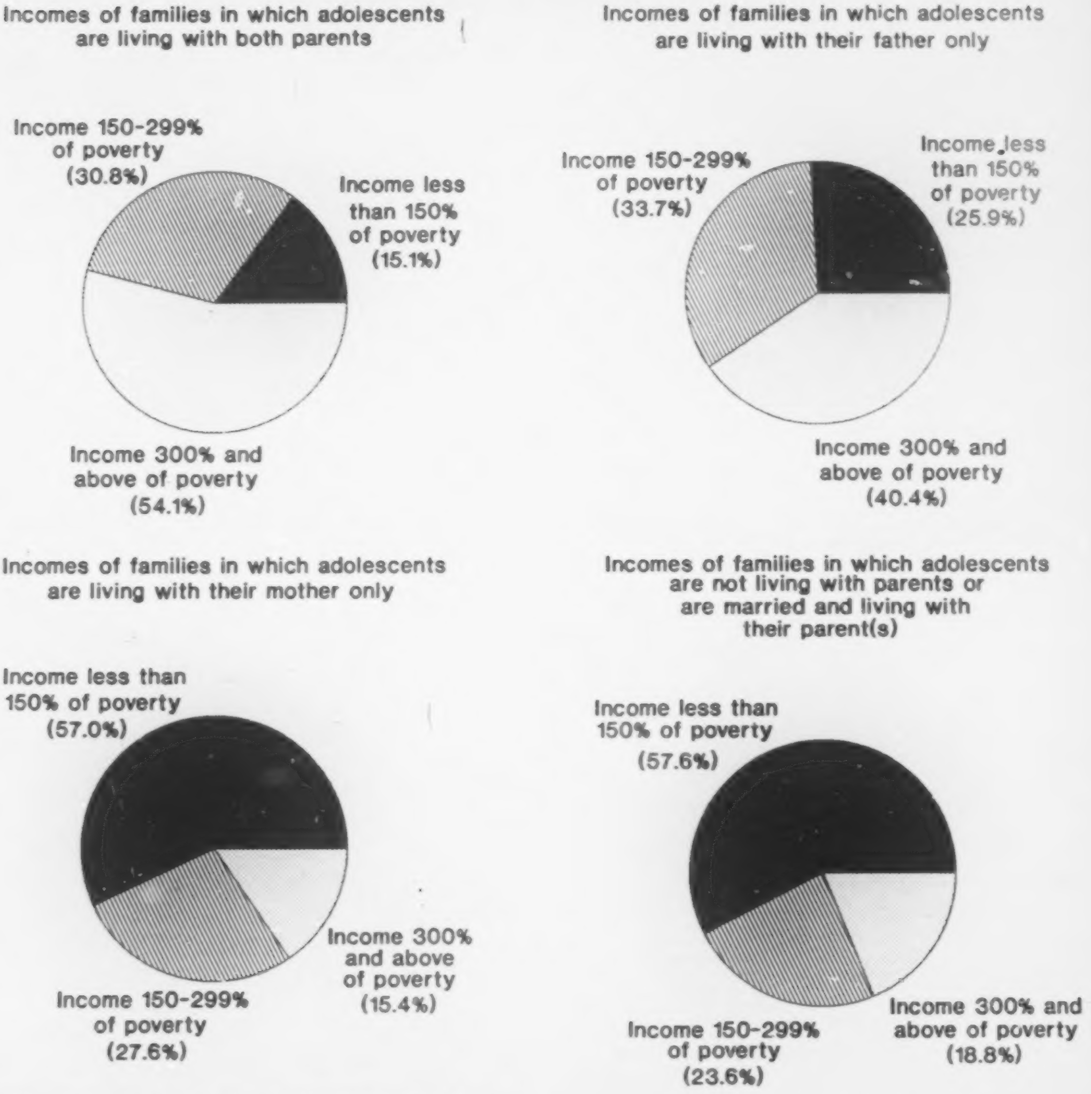
[a] Family income is expressed in relation to the Federal poverty level. In 1987, the Federal poverty level was $9,056 for a family of three.

SOURCE: Office of Technology Assessment 1991, based on R. Kronick, Adjunct Professor, University of California, San Diego, CA, calculations based on U.S. Department of Commerce, Bureau of the Census, March 1988 Current Population Survey public use files, 1989.

Photo credit: Office of Technology Assessment

Dilapidated housing is among the stressful factors that many poor adolescents confront.

Figure 23—Family Incomes as a Percent of the Federal Poverty Level by U.S. Adolescents' Living Arrangements, 1988[a]



NOTE: Figures may not add to 100 percent because of rounding error.

[a] Family income is expressed in relation to the Federal poverty level. In 1988, the Federal poverty level was $9,431 for a family of three.

SOURCE: Office of Technology Assessment, 1991, based on R. Kronick, Adjunct Professor, University of California, San Diego, CA, calculations based on U.S. Department of Commerce, Bureau of the Census, March 1989 Current Population Survey public use files, 1990.

restricted activity due to acute and chronic conditions, overall self-reported fair or poor health, school dropout, adolescent pregnancy, cigarette smoking, involvement in serious forms of delinquency, victimization) are higher among poor than nonpoor adolescents, many, if not most, poor adolescents appear to survive their childhoods relatively unscathed.

Research on the predictors of resiliency among adolescents from disadvantaged backgrounds (including impoverished homes) is receiving increasing attention from researchers, although it has received little Federal support. Past research on this topic suggests that having access to supportive individuals and networks, and the ability to draw upon existing networks (e.g., through greater social competence and intelligence), are important factors in helping adolescents overcome adverse circumstances. For many adolescents these factors may be amenable to intervention.

Racial and Ethnic Minority Adolescents

Currently, half of black, Hispanic, and American Indian adolescents, and 32 percent of Asian-American adolescents, are poor or near-poor (below 150 percent of the Federal poverty level) (see figure 24). The disproportionate occurrence of health problems that is found among adolescents in these racial, ethnic, and tribal groups is attributable at least in part to their poverty status, and the lack of access to health care that is associated with being poor. A long history of discrimination against people of color may contribute to stress in racial and ethnic minorities (e.g., 106,183).

Among the pressing prevention and service needs for racial and ethnic minority adolescents include preventive mental health and mental health outreach programs for Hispanic, Asian, and American Indian and Alaska Native adolescents; dental care and fluoridation for American Indian and Alaska Native, and Hispanic adolescents; dental care for low-income black adolescents; victimization and violence prevention for black adolescents in poor neighborhoods; pregnancy prevention services for black and Hispanic adolescents; HIV prevention and treatment services for black and Hispanic adolescents. In general, however, these problems are not restricted to these groups, and the sources of the problems are not related to race per se (e.g., genetically based), but to complex interactions among economic, neighborhood, and societal factors.

There is an increasing consensus that services for racial and ethnic minority adolescents would be improved if they were "culturally competent." Culturally competent services for adolescents may be difficult to design, though, because there is little systematic information about how racial and ethnic minority and poor adolescents experience adolescence. There is beginning to be some systematic analysis of what a culturally competent system of care is, but the knowledge base has not yet been applied systematically to the design of training programs for health care and other service providers. Overall, there is little systematic description of how services have been developed or adapted to meet the specific needs of racial and minority adolescents, and less scientific evaluation of the effectiveness of available services. There are, however, very few health care providers who are racial or ethnic minorities. The number who are racial and ethnic minorities and trained to work specifically with adolescents is not known.

Photo credit: © Ted Kirk/Education Week

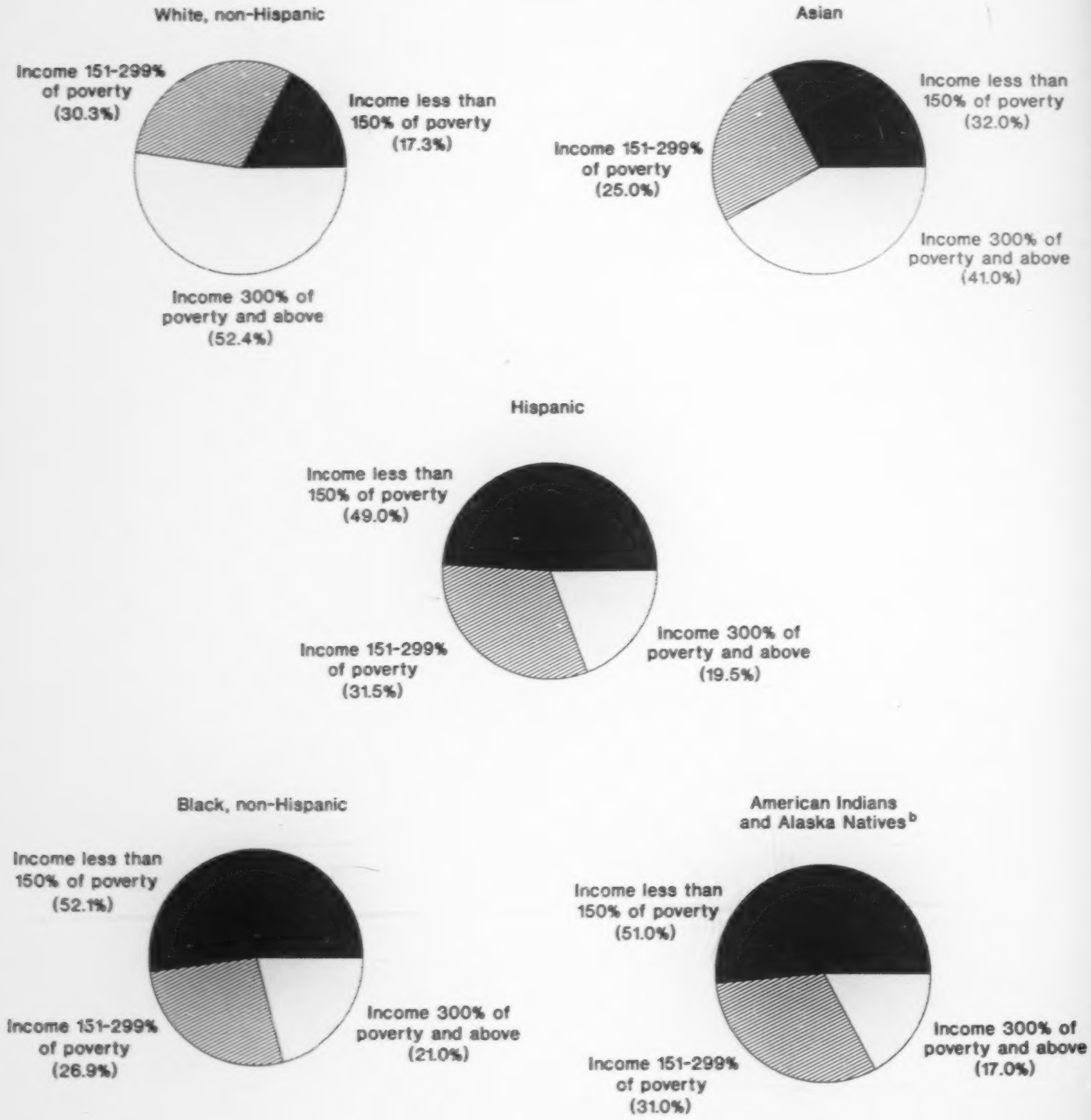
Some research suggests that adolescents who live on farms are particularly unlikely to have access to sources of health care.

Rural Adolescents

With the exception of the higher rate of accidental injuries (due in part to farm injuries) and lower rate of delinquency for adolescents living in rural areas, there are few known sizable rural-urban *differences* in adolescent health. Although research on adolescents living in rural areas is limited, this suggests that rural adolescents are at least as likely to experience many of the same health problems experienced by adolescents in metropolitan areas. However, additional descriptive research designed to separate rural, regional, social class, and ethnic factors is needed, in addition to analyses to determine the possibly differential effects of particular dimensions of rural life (e.g., living on a farm v. in a town) on adolescent health and well-being.

Rural adolescents' access to health services is limited by shortages of professionally staffed mental and physical health services, transportation problems, and less access to Medicaid in rural States (233). Thus, adolescents in rural areas are especially likely to receive their health care from hospital

Figure 24—Family Incomes as a Percent of the Federal Poverty Level by U.S. Adolescents' Race/Ethnicity, 1988[a]



[a] Family income is expressed in relation to the Federal poverty level. In 1988, the Federal poverty level was $9,431 for a family of three.

[b] Because of the small number of American Indians and Alaska Natives sampled for the Current Population Survey and various limitations of the survey design, the estimates for this group may be unreliable. The proportion with incomes less than 150 percent of poverty could be between 41 to 61 percent (111). However, the high rate of poverty among American Indians and Alaska Natives found through the Current Population Survey is consistent with estimates from other sources (223).

SOURCE: Office of Technology Assessment, 1991, based on R. Kronick, Adjunct Professor, University of California, San Diego, CA, calculations based on U.S. Department of Commerce, Bureau of the Census, March 1989 Current Population Survey public use files, 1990.

Table 25—Specific Options Related to the Delivery of Services to Poor Adolescents, Racial and Ethnic Minority Adolescents, and Rural Adolescents (ch. 18)

Option 1: Improve access to health and related services among poor adolescents, disadvantaged racial and ethnic minority adolescents, and rural adolescents.[a]

- Expand support for training of racial and ethnic minority, rural, and low-income health care providers with an interest in adolescent health care.
- Support training in cultural competence for health care providers who work with racial and ethnic minority adolescents, incorporating evaluations of the effects of such training.
- Support preventive mental health and mental health outreach programs for Hispanic, Asian, and American Indian and Alaska Native adolescents.
- Increase support for dental care for American Indian and Alaska Native, Hispanic, and low-income black adolescents.
- Support injury prevention efforts targeted to rural and American Indian adolescents.
- Support homicide and violence prevention efforts targeted to male adolescents living in inner cities.
- Support innovative efforts (accompanied by rigorous evaluation) to increase rural adolescents' access to health care services (e.g., school-based youth services centers, improved transportation, use of nonprofessionals, dissemination of information about availability of local health services).

Option 2: Support Federal data collection and research related to selected groups of adolescents.

Data collection:

- Support the expansion of data collection efforts to oversample racial and ethnic minority adolescents and to include information on socioeconomic status.
- Collect data on the availability and accessibility of health services for racial and ethnic minorities, rural, and poor adolescents, with such research to include adolescent perceptions of accessibility and availability.

Research:

- Support research on the impact of racial and ethnic minority status and poverty on adolescent health and development, including health beliefs and practices. Include the effects of rural poverty. Such research should attempt to ascertain the positive, as well as negative, aspects of racial and ethnic identification and all strata of socioeconomic status, and such research should be conducted in such a way that the effects of racial and ethnic minority status can be distinguished from socioeconomic status.
- Support evaluations of the use of nonprofessionals to provide health and related services to rural, minority, and poor adolescents.

Option 3: Foster changes in adolescents' environments.

- Support fluoridation of drinking water supplies in the Southwest.
- Support efforts to improve environments in poor areas (including hard-hit farm belt communities, Indian reservations, and inner cities), focusing on family support, improving school environments, improving dilapidated housing, increasing access to nutritional food, increasing access to recreational and fitness facilities and activities, and increasing access to appropriate adult role models.

[a] See Major Option 1 related to improving adolescents' access to health and related services that was presented in table 5.

SOURCE: Office of Technology Assessment, 1991.

clinics, and are relatively unlikely to have any consistent source of care (132). Some research suggests that adolescents who live on farms are particularly unlikely to have access to sources of health care (323). Innovations in efforts to provide more comprehensive and integrated services will have to be adapted to the specific needs of rural adolescents, and specific limitations in health care resources (e.g., the relative scarcity of health care professionals).

Options related to the delivery of services to, and the improvements of environments for, poor adolescents, racial and ethnic minority adolescents, and rural adolescents are presented in table 25.

The Role of Federal Agencies in Adolescent Health (ch. 19)

OTA's analysis of Federal expenditures and efforts on behalf of adolescents finds that, with some condition-specific exceptions (e.g., drug use), attention to adolescent concerns has been weak and fragmented. Most Federal agencies do not provide specific budget lines for adolescents but include adolescents as part of a larger, more general, research or service focus. Within DHHS, for example, it is rare for an agency to devote more than 10 percent of its expenditures specifically to adolescents.[201] In those agencies outside of DHHS, adolescent issues tend to receive a larger proportion of appropriated money, although the total amounts are small.

Because adolescents require comprehensive, continuous, developmentally appropriate, labor-intensive interventions, they may not be receiving the services they need when they are included as part of programs serving children in general or adults. On the other hand, it is important to view adolescents as part of a life-span continuum and not separate them inappropriately from other age groups. What has occurred, however, is a somewhat scattershot approach neither intensively oriented toward adolescents as a specific population nor attentive to the relationships between other developmental periods and adolescence. Thus, as opposed to some specific behaviors engaged in by some adolescents and judged to be both prima facie unacceptable *and* characteristic of adolescents as a group, adolescents do not appear to have a high priority on the Federal agenda.

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[201] The Centers for Disease Control's Division of Adolescent and School Health, the National Institutes of Health's National Institute of Allergy and Infectious Diseases, and the Alcohol, Drug Abuse, and Mental Health Administration's National Institute of Mental Health are the exceptions.

Several strategies related to the Federal role in adolescent health were discussed in conjunction with Major Option 2 (see table 6). An additional option is presented in table 26.

Barriers and Opportunities to Change

Both barriers and opportunities become apparent in considering the potential for change in approaches to adolescent health. This analysis focuses on barriers and opportunities particular to national public policy, but many of the same points are relevant to actions that can be taken by the numerous actors responsible for adolescent health: parents, schools, community leaders, State and local governments, private sector organizations, and adolescents themselves.

Although they are for the most part interrelated, the primary barriers to change can be characterized as having to do with characteristics of the contemporary health service delivery system, with the Federal budget deficit, and with science policy. Barriers related to attitudes toward adolescents were discussed earlier (see "A New Approach"). Opportunities include the renewed attention to adolescent health concerns in a variety of public and private initiatives and concerns about the changing nature of the workforce and the country's economic future.

Barriers to Change

Health Care System

Brindis and Lee recently summarized the important factors that shape health-related American public policy (25). These factors—which Brindis and Lee summarized as "the American character"—include such American ideals as individualism, freedom of choice, the right to bear arms, freedom of expression, capitalism, and competition, as well as attitudes about dominance of the private sector and the marketplace and the limited role of government in solving economic and social problems. According to Brindis and Lee, the American character "is a key factor affecting choices available to policymakers, including choices about adolescent health."

Table 26—Specific Options Related to the Role of Federal Agencies in Adolescent Health (ch. 19)

Option 2: Support Federal research and data collection
- Stipulate that certain rigorous methodological criteria be met for demonstration projects, especially in topic areas that currently receive high levels of resources (e.g., prevention of drug and alcohol abuse, pregnancy prevention).

SOURCE: Office of Technology Assessment, 1991.

The American values that shape public policy have also helped to shape the American health care system, which has emerged as pluralistic and dominated by the private sector (25). Two other concepts that can be used to characterize the current health care delivery system are stance and concept (332). The health care delivery system takes a "waiting" rather than a "seeking" stance (332):

> The waiting mode is characterized most strongly by professionals physically remaining within a service system and, indeed, waiting for clients, generally with chronic problems, to come to them. . . . The seeking mode describes a style where professionals are usually physically operating outside the service system and seeking to intervene in problems before they become chronic. However, in practice, it is acknowledged that waiting/seeking is best thought of as a continuum, and less as a dichotomy.

Consistent with the waiting stance, most health care interventions (including preventive interventions) are focused on the individual or interpersonal levels, rather than organizational/institutional or environmental levels.

As discussed above, adolescents face issues common to other age groups, and other barriers unique to them (see table 1 in "Major Findings"). Unique barriers include legal barriers to access, lack of confidentiality, lack of income that would support payment for the health and related services that they might choose,[202] and lack of the information that would make them effective consumers of health care. In addition, adolescents may be particularly affected by the tendency of the health care financing system to emphasize treatment for full-blown clinical problems over secondary prevention through early intervention for subclinical problems. Many of the services that adolescents need are low-technology, time-intensive services that are generally not well-supported by current financing mechanisms, and thus not profitable to provide. Although the nature of financing health care is changing somewhat in the direction of increasing support for cognitive services,[203] the financial predominance of high technology interventions does limit the amount of change that could be expected in the delivery of health services to adolescents,[204] unless an extraordinary effort is expended to manage the health care of adolescents differently from that of other age groups.

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[202] Although adults may lack the income it would take to gain access to needed or desired health care services, the social status of adults is such that they have greater opportunities to earn income than adolescents do. Depending on their age and other circumstances (the cost of the care being sought), adolescents' opportunities to earn a sufficient income to support themselves and gain independent access to health services are limited by restrictions on their ability to work (e.g., because of child labor laws) and low earning levels (e.g., typically minimum wage or, perhaps appropriately, entry level wages). In addition, adolescents are typically not eligible to get credit on their own until they reach the age of majority (18 in most States; see ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III). Some adolescents, of course (e.g., those who do have a relatively high paying job, who save money obtained through gifts, or who receive a generous allowance, or otherwise have an independent source of funds), would have enough income to gain access to at least some health care services.

Federal Budget Deficit

In part as a result of the Federal budget deficit—estimated to be $220 billion at the end of fiscal year 1990 (316)—Federal social policy expenditures are generally in a "no-growth" phase. Although there was by some accounts a substantial increase in discretionary domestic spending between 1989 and 1990[205] [206] (212), the Budget Enforcement Act of 1990 (Title XIII of OBRA-90) established spending limits on discretionary spending for 5 fiscal years (from fiscal years 1991 through 1995) (215). For the category of domestic spending for fiscal years 1991 to 1993, the limits were such that discretionary programs would grow only at the expected rate of inflation.[207] Thus, by law, domestic discretionary spending can rise from $198.3 billion to $210.1 billion (6 percent) between fiscal years 1991 and

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[203] In OBRA-89, Congress, following the recommendation of the Physician Payment Review Commission, adopted a "resource-based" fee schedule as the basis for paying physicians for Medicare Part B (outpatient) services. This will increase payments for primary care services and reduce some payments for technical services (e.g., surgery). Primary care services tend to involve more interpersonal interaction than do high technology services. The new payment method is expected to increase Medicare revenues to specialities for which primary care services are a substantial part of practice, such as family practice and internal medicine (170). At present, changes following the recommendations of the Commission apply only to the Medicare program. However, the Commission has recently been mandated to consider physician payment under Medicaid (170). In addition, health care financing changes adopted by the Federal Government sometimes act as a catalyst for change in the private health insurance sector.

[204] For example, although such innovations as school-linked health centers have begun to address some of the needs of adolescents without any source of payment for services (i.e., without health insurance (see ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III)), it has been observed that at least some school-linked health centers tend to follow the prevailing "waiting" model of providing health care services (e.g., not providing sufficient outreach) (105). Some have observed that school-linked health centers work best when they are integrated into the "life" of the school (e.g., 29). In addition, the Center for Population Options' study of school-linked health centers located in schools observed that cost-saving measures engaged in by school-linked health centers lead to heavy staff turnover, reducing the continuity of the relationships that can be developed between the staff and students (105).

[205] *Discretionary* domestic social welfare programs (including health programs) consist mostly of grants to States for education, training, employment, and social services, certain health care services, and some food assistance programs (47,218). Domestic discretionary programs include *social programs* such as Head Start, the Job Training Partnership Act, Compensatory Education, Student Financial Assistance, Handicapped Education, Alcohol, Drug Abuse, and Mental Health programs, Special Supplemental Food Program for Women, Infants, and Children, the Child Care Development Block Grant, Vocational and Adult Education, low-income housing, and *nonsocial* programs such as Highways, the Federal Aviation Administration, the National Aeronautics and Space Administration, the Drug Enforcement Task Force, the Federal Prison System, and the Drug Enforcement Administration (212,218). The largest social welfare programs are legal entitlements (218).

[206] Firm estimates of *discretionary social* spending for fiscal year 1990 (for the purposes of comparing such spending to fiscal year 1991 and beyond) are not available. The Office of Management and Budget estimated an 11.7-percent increase in *overall social welfare* spending between 1990 and 1991 (not adjusted for inflation), compared to the 8.9-percent increase that occurred between 1989 and 1990 (318). (The Congressional Research Service included in the total for social welfare spending the following categories and estimated the following changes between 1989 and 1990, adjusted for inflation: social security (1.3-percent increase); Medicare (9.6-percent increase); income security (3.8-percent increase); health (14.4-percent increase [includes Medicaid]; education, training, employment and social services (2.7-percent decrease); and veterans' benefits (7.8-percent decrease) [218].) The House Budget Committee reported the following fiscal year 1991 increases in budget authority over fiscal year 1990 levels for selected domestic *discretionary* programs: Head Start ($400 million); Job Training Partnership Act ($143 million); Compensatory Education ($857 million); Handicapped Education ($390 million); Alcohol, Drug Abuse, and Mental Health Administration ($256 million); Assisted Housing ($1,801 million); Special Supplemental Food Program for Women, Infants, and Children ($224 million) (212).

[207] For fiscal years 1994 and 1995, the limits on new budget authority and outlays are established only for total discretionary spending (215). In the fourth and fifth years of the 5-year accord enacted into law under OBRA-90, "the $115 billion in savings would be allocated between military and nonmilitary accounts by House and Senate appropriations committees" (237).

1992 and from $210.1 billion to $221.7 billion (5.5 percent) between fiscal years 1992 and 1993 (215).[208] [209]

The fact that the Budget Enforcement Act wrote into law *separate* spending limits for military, domestic, and foreign aid discretionary spending programs for 1991, 1992, and 1993, means that spending increases in any one domestic category would essentially have to come from decreases in another domestic category.

Of primary concern in deficit reduction are efforts to reduce spending on health care (e.g., 238).[210] As a result of an aging population, advances in technology, and other factors (222), national health expenditures continue to increase, from 7 percent of the gross national product in 1970 to 11.1 percent of the gross national product in 1987 (254,261).[211]

Limitations of Prevailing Approaches to Program Design and Evaluation

Another barrier to progress in improving interventions designed to enhance adolescent health can be found in current approaches to program design and evaluation. Cook and his colleagues are preparing a critique of the current approach as it applies to social science research in general, and adolescent health evaluation research in particular, for the forthcoming Carnegie Corporation-sponsored volume, *Adolescent Health Promotion* (41), and their comments will provide a useful framework for thinking about theoretical development in adolescent health services, program design, and evaluation.

Cook et al. argue that the design, implementation, and evaluation of services for many complex, socially determined, adolescent health problems are not amenable to the almost universally accepted medical framework. According to Cook et al., the use of the randomized clinical trial—the preferred approach in the medical and health sciences field—as the model for evaluation is inappropriate because it "seeks to identify the consequences of a small number of manipulanda [variables] taken individually or as a small number of statistical interactions. . .The [randomized clinical trial] model does not attempt to develop a complete causal model of any outcome" (41). Instead, Cook and his colleagues propose a theory of evaluation predicated on the "primacy of causal explanation." If this theory were followed, evaluation research would be used to simultaneously evaluate prevention and treatment interventions and develop complex models of the causes of behaviorally and socially related adolescent health problems.

It is important to note that Federal programs currently fund, and as a correlate, individual investigators typically design, studies that follow the medical model. Maintaining this framework for funding for a limited set of conceptualizations of adolescent health will not advance the field very much.

Opportunities To Change

Renewed Attention to Adolescent Health Concerns

At the same time that general attitudes toward adolescents continue to be unsympathetic, a number of public and private initiatives have begun to change the terms of the debate about adolescent health. These include private foundations such as the Carnegie Corporation of New York and its Carnegie Council on Adolescent Development (28,29,51,62,137), the MacArthur Foundation (funding studies in successful adolescence in high-risk environments), the Robert Wood Johnson Foundation (180), the Ford Foundation (66), the Annie E. Casey Foundation, the Charles Stewart Mott Foundation

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[208] The spending limits shown reflect the adjustments (e.g., for Internal Revenue Service tax compliance funding) that the Office of Management and Budget was authorized to make when it submitted its final "sequestration report" for fiscal year 1991; these adjustments were made after the adjournment of the 101st Congress, 2d session, on Oct. 27, 1990 (215; also see, Title XIII, Public Law 101-508). For updates of the Office of Management and Budget adjustments, which in the aggregate increased the domestic caps by very small amounts, see the President's Budget for fiscal year 1992 (318). It may be important to note that the discretionary caps were set in terms of dollar amounts and not percentages as a function of inflation.

[209] Defense spending was projected to decrease 0.7 percent between fiscal years 1991 and 1992, and another 1 percent between fiscal years 1992 and 1993. Even so, discretionary defense spending would remain greater than discretionary domestic spending ($297 billion in fiscal year 1991).

[210] For example, OBRA-90 pared Medicare $42.4 billion over 5 years, with an anticipated $10 billion coming from increased costs to beneficiaries, and the remainder coming from reduced reimbursements to physicians and hospitals. Spending for Medicaid was projected to be cut $607 million over 5 years by requiring drug companies to offer price discounts to those in the program.

[211] In 1988, expenditures for health care in the United States were estimated to total $539.9 billion, a 10-percent increase from the previous year (254). Eighty-eight percent of this amount was for so-called personal health care—including 39 percent for hospital care, 19 percent for physician services, 8 percent for nursing home care, and 22 percent for other personal health care (other professional services, home health care, drugs and other medical nondurables, vision products and other medical durables, and other), and 12 percent was for research, construction, program administration, the net cost of private health insurance, and public health activities (254).

(31,32,33,131,167), The Edna McConnell Clark Foundation (118), the W.T. Grant Commission (330), the Lilly Endowment (e.g., the Youth as Resources program (155)), the Milton S. Eisenhower Foundation (138) and the W.K. Kellogg Foundation (334).

Several States have developed special youth initiatives (52), and some State coordination efforts were supported by the short-lived Federal initiative, Youth 2000 (314).

On the Federal level, the Centers for Disease Control in DHHS now has a Division of Adolescent and School Health, and has provided substantial funding for the development of a Youth Behavioral Risk Factor Survey. The National Institute on Child Health and Human Development (within DHHS' National Institutes of Health) is developing plans for an adolescent program (3). In 1990, adolescent health was the theme of the DHHS-sponsored Child Health Day. The President's Budget for 1992 noted that Federal spending to benefit children (no ages specified) has grown far less quickly than spending on adults; it estimated that Federal spending on children has been essentially level (at about $100 billion in 1992 dollars) from 1976 to 1989, while Federal spending on adults rose from less than $100 billion in 1960 to about $525 billion in 1989 (1992 dollars)[212] (318). A major theme of the President's budget message was "Focusing on Prevention and the Next Generation" (318).

Separate estimates for spending on adolescents were not provided in the 1992 budget proposal, however, and many of the proposed funding increases focused primarily on younger children (e.g., programs to reduce infant mortality, childhood immunizations, prevention of lead poisoning).[213] The focus of the entire prevention initiative was on "individual behavior and personal responsibility" and "fostering a climate of personal responsibility" (318). In total, the administration estimated that its proposed budget would result in an increase of 9.5 percent for programs serving children; however, many of these programs (77 percent of the overall spending on children) are mandatory (entitlement) programs; thus, increases in discretionary spending are quite limited (318). Nevertheless, the recognition that children have been underbenefitted relative to other age groups can be considered encouraging.

Photo credit: UAW-Ford National Education, Development and Training Center

Several private and public adolescent health initiatives have been stimulated by concerns about the changing demographics of the country, including the changing nature of the workforce and the implications of these changes for the country's economic future.

Concerns About the Changing Nature of the Workforce and the Country's Economic Future

Several, if not most, of the private and public adolescent health initiatives, including this Report, have been stimulated at least in part by concerns about the changing demographics of the country, including the changing nature of the workforce and implications of these changes for the country's economic future. The U.S. population is becoming older, and more culturally and ethnically diverse (240,242,328). The outlines of the impact of the change in age ratio on the Nation's economic future can be seen in the changing dependency ratio[214] (see figure 25). Beginning in the year 2010, increases in

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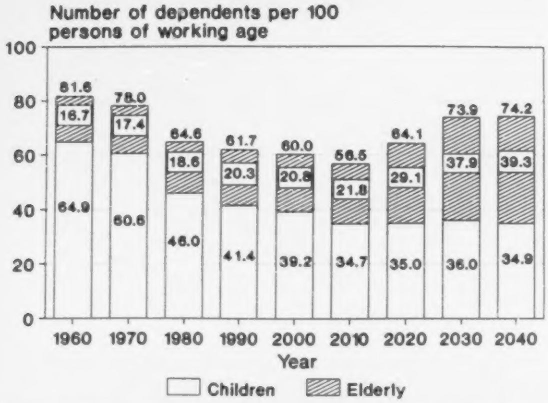
[212] The sources of these estimates (including types of programs) were not provided, and OTA did not attempt to evaluate their accuracy.

[213] Funding increases with a potentially more direct application to adolescent needs included injury prevention programs (a 13-percent increase, from $1,683- to $1,907-million, although this included transportation safety programs such as the Federal Aviation Administration and the Coast Guard); family planning (a 5.2-percent increase, from $399- to $420-million, affecting the Public Health Service family planning grants and the Medicaid program); and smoking cessation (a 7.7-percent increase, from $90- to $97-million, affecting the National Institutes of Health, the Alcohol, Drug Abuse, and Mental Health Administration, and the Centers for Disease Control).

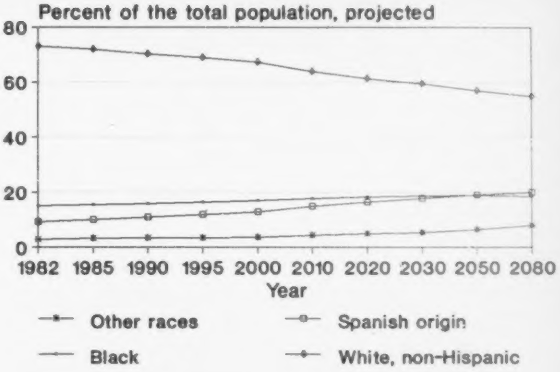
[214] The dependency ratio is the number of children and elderly people per every 100 people of working age.

Figure 25—Changes and Projected Changes in the Number of Dependents per 100 Persons of Working Age, 1960 to 2040



SOURCE: Office of Technology Assessment, 1991, based on U.S. Department of Commerce, Bureau of the Census, *Projections of the Population of the United States, by Age, Sex, and Race: 1988 to 2080*, Current Population Reports Series P-25, No. 1018 (Washington, DC: U.S. Government Printing Office, January 1989).

Figure 26—Projected Changes in the Racial and Ethnic Makeup of the U.S. Population Under Age 18, 1982 to 2080



SOURCE: U.S. Department of Commerce, Bureau of the Census, *Projections of the Hispanic Population: 1983 to 2080*, Current Population Reports, Population Estimates and Projections, Series P-25, No. 995 (Washington, DC: U.S. Government Printing Office, January 1986).

the number of elderly dependents and decreases in the numbers of working age individuals will cause the overall dependency ratio to rise.[215]

The overall, child-dependent, and working-age populations are changing in racial and ethnic make-up, as well. In 1982, approximately 73 percent of the U.S. population was white, non-Hispanic; by the year 2010, the proportion is expected to decline to 64 percent; and by the year 2080, only 43 percent of the U.S. population is expected to be white, non-Hispanic (246).[216]

While the greatest impact on the dependency ratio will be occurring in the proportion of nonworking elderly, most of the increases in Hispanic and/or nonwhite populations will be occurring as a result of higher fertility (72). Thus, large increases in the proportion of Hispanic and/or nonwhite children have been projected. The Hispanic[217] and/or non-white population below age 18 is expected to grow from 26 percent in 1989 (246), to 33 percent in the year 2000, and to 45 percent by the year 2080 (see figure 26) (246).[218]

White participation in the labor force is expected to grow more slowly than that of blacks, Asians and others, and Hispanics, reflecting slower rates of population growth and an older age structure among non-Hispanic whites (72). In the year 2000, for example, only 31.6 percent of *new* entrants to the workforce will be white, non-Hispanic, males,[219] while such males will represent nearly half (an estimated 48.2 percent) of those leaving the workforce (72).[220] By the year 2000, 26 percent of the labor force is expected to be Hispanic and/or nonwhite (see figure 27) (72). Forty-seven percent of the labor force is expected to be female (72).

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[215] Since 1970, when there were 81.6 dependents (children and elderly people) for every 100 people of working age, the dependency ratio has been declining, largely because of a rather precipitous decline in the child dependency ratio.

[216] Although somewhat old, these are the latest available Census projections. Available data from the 1990 Census support the gist of these projections, however (248).

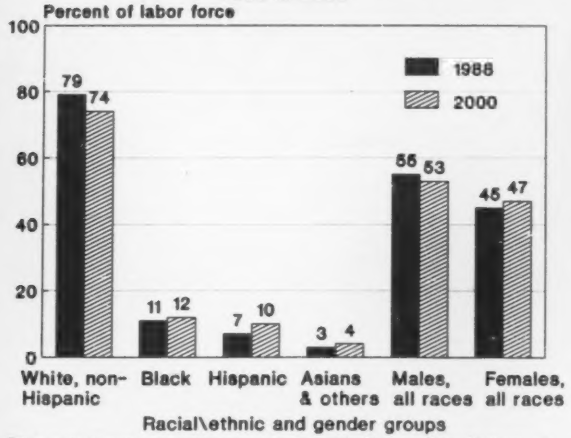
[217] Persons of Hispanic origin may be of any race.

[218] These projections are from a 1986 Census report, and thus may be somewhat dated. However, these are the latest available projections that break out individuals of Hispanic origin. The 1989 Census report on projections only reports data for whites, blacks, and total population (242).

[219] Between 1988 and 2000, 15 percent of new entrants are expected to be Hispanics, 13 percent are expected to be black, 6 percent are expected to be Asian, and 35 percent are expected to be white, non-Hispanic women (72).

[220] The proportion of white males in the workforce is a traditional benchmark, at least in part because male participation has been less subject to changes as a result of societal forces (e.g., choice, the availability of child care, or discrimination).

Figure 27—Projected Changes in the Racial, Ethnic, and Gender Makeup of the U.S. Labor Force, 1988 to 2000



[a] The male-female proportion may vary somewhat by race and ethnic group. For example, between 1988 and 2000, more of the Hispanic entrants to the labor force are expected to be males, and more of the black entrants are expected to be females.

SOURCE: H.N. Fullerton, "New Labor Force Projections, Spanning 1988 to 2000," *Monthly Labor Review,* November 1989.

In many respects such cultural and gender diversity can only be welcome in the country and in the workplace. However, these trends have raised concerns for several reasons addressed in this Report and elsewhere (38,330). Perhaps most important, currently half of the adolescents in three out of four of the largest racial and ethnic minority groups (American Indians and Alaska Natives,[221] blacks, and Hispanics) in the United States live in poverty (see figure 11 in "Major Findings" and 24 in "Issues in the Delivery of Services to Selected Groups of Adolescents").[222] Poor racial and ethnic minorities are both the least likely to complete school and the most likely to experience the health problems that are likely to interfere with optimal functional development and ability to contribute to the Nation's productivity (e.g., adolescent parenting; incarceration for delinquency; violence (see appendix B, "Burden of Health Problems Among U.S. Adolescents," in Volume III)).

Attention to concerns about the future may prompt those responsible for public policymaking to act to improve the health and well-being of adolescents in general, as well as the health and well-being of the most disadvantaged.

Photo credit: Office of Technology Assessment

Adolescents who are both poor and members of racial or ethnic minorities are more likely to be without the necessary safety nets that help the typical adolescent through the second decade of life, but even white middle-class adolescents are at risk of developing problems and not having access to needed health services and other sources of support.

Conclusion

Despite well-entrenched barriers to implementing changes in approaches to promoting and improving adolescent health, OTA found that change is essential. The social and economic costs to today's adolescents, and to the Nation, of not making improvements in the Nation's approach to adolescent health issues may not be quantifiable, but they are potentially enormous. Adolescents who are both poor and members of racial or ethnic minorities are more likely to be without the necessary safety nets that help the typical adolescent though the second decade of life, but even white middle-class adolescent are at risk of developing problems and not having access to needed health and other sources of support.

OTA concludes that **a more sympathetic, supportive approach to adolescents is needed. Should society take such an approach, which includes taking a more participatory approach to adolescent problem-solving, more concrete steps to help improve adolescent health will become apparent.** OTA's analysis suggested three tangible approaches that could also be taken to benefit adolescents: **improving access to health services; restructuring and invigorating the Federal role in adolescent health; and improving adolescents' environments.** Each of these approaches can be addressed in numerous ways, many outlined in this Report. This Report, comprehensive as it attempted to be, does not pretend, however, to have all the "answers" to the well-remarked upon crisis in adolescent health. Many of the problems are in fact socially defined; others clearly are not, and others will change as new generations of children reach adolescence. Development of the solutions to problems, should they continue to be considered problems, will undoubtedly be an iterative process.

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[221] Half of all American Indians and Alaska Native adolescents also live in poverty. While the total population of American Indians and Alaska Natives is numerically small, half are age 19 or under (228).

[222] Unfortunately, the Bureau of Labor Statistics does not report labor force participation projections by socioeconomic status. The combination of racial and ethnic minority status and poverty is discussed in ch. 18, "Issues in the Delivery of Services to Selected Groups of Adolescents," in Vol. III.

Photo credit: Benjamin Smith, Washington, DC

APPENDIXES

Appendix A
METHOD OF THE STUDY

Overview of Publications

OTA's Report, *Adolescent Health*, is being published in three volumes:

- Volume I. Summary and Policy Options;
- Volume II. Background and the Effectiveness of Selected Prevention and Treatment Services; and
- Volume III. Crosscutting Issues in the Delivery of Health and Related Services.

A full table of contents for all three volumes appears in box A-1.

OTA's assessment on adolescent health also includes two other publications. One, a Report entitled *Indian Adolescent Mental Health*, was released in January 1990. This Report analyzed the mental health needs of Indian adolescents and the services available to address them. The second publication, a background paper entitled *Adolescent Health Insurance Status*, was prepared by Richard Kronick and was released in July 1989. This background paper looked at how many adolescents are uninsured, why some adolescents are insured and others are not, the change in the number of uninsured adolescents over time, and the effect of selected potential policy changes in reducing the number of uninsured adolescents. Several papers were prepared under contract in the course of this assessment, and those papers are listed in the "Contractor Papers" section below.

Request for the Study

This OTA assessment of adolescent health was prompted by several concerns, many of them arising from the recognition that today's youth will someday support an expanding aging U.S. population. Within this context, OTA was asked to address the following topics:

- the health status of adolescents;
- factors that put adolescents at risk for health problems or protect them from such problems, including racial and ethnic backgrounds, socioeconomic status, gender, and developmental stage;
- issues related to the organization of health care services and technologies available to adolescents, including accessibility and financing;
- issues related to the monitoring of adolescent health and opportunities for improving national data collection of efforts; and
- gaps in research on the health and behavior of adolescents and opportunities for public and private support.

OTA's adolescent health study was requested principally by Senator Daniel K. Inouye, Chairman of the Senate Select Committee on Indian Affairs, and Senator Nancy L. Kassebaum, Ranking Minority Member of the Subcommittee on Education, Arts, and Humanities of the Senate Committee on Labor and Human Resources. Other requesters included Chairmen and/or Ranking Minority Members of the Senate Appropriations Committee, the Senate Commerce, Science, and Transportation Committee, the Senate Finance Committee, the Senate Labor and Human Resources Committee, the Senate Small Business Committee, the Senate Veterans' Affairs Committee, and the House Interior and Insular Affairs Committee. The requesters included the Chairman and six senatorial members of the congressional Technology Assessment Board (see box A-2). The Technology Assessment Board approved the proposal to study adolescent health in June 1988, and OTA staff began working on the project in July 1988.

Involvement of a Nonprofit Foundation

An unusual feature of OTA's adolescent health assessment was the involvement of a nonprofit foundation. On August 4, 1988, Carnegie Corporation of New York agreed to assist OTA in carrying out the assessment of adolescent health. The Carnegie Council on Adolescent Development, an operating arm of Carnegie Corporation of New York, provided various types of assistance for OTA's Report, including assistance in the provision of data, support for workshops and various contractors, consultation and professional advice, and detailees to assist with research and writing.

Advisory Panel and Reviewers

Advisory panels for OTA studies guide OTA staff in selecting issues and material to consider and in reviewing the written work of the staff; however, such panels are not responsible for the content of final reports. In 1988, during the initial phase of the adolescent health project, OTA developed a list of possible members for OTA's Adolescent Health Advisory Panel through searches of relevant literature and discussions with researchers, service providers, and other experts in adolescent health issues. The 24 individuals who agreed to serve on OTA's Adolescent Health Advisory Panel came from a variety of fields and had expertise in health policy, adolescent development, mental health, social welfare, education, adolescent medicine, nursing, psychology, and alcohol and drug abuse policy and treatment (see listing at the front of this volume). Many panel members were parents of adolescents; in addition, the Parent-Teacher Association identified one person to be a parent representative. Felton Earls, professor at the Harvard School of Public Health chaired, and Michael Cohen, chairman of the

Box A-1—Full Table of Contents for OTA's Adolescent Health Report

VOLUME I: SUMMARY AND POLICY OPTIONS

Appendixes

- A. Method of the Study
- B. Acknowledgments
- C. Issues Related to the Lack of Information About Adolescent Health and Health and Related Services
- D. Glossary of Abbreviations and Terms

VOLUME II: BACKGROUND AND THE EFFECTIVENESS OF SELECTED PREVENTION AND TREATMENT SERVICES

- 1. Introduction

Part I: Background on Adolescent Health

- 2. What Is Adolescent Health?
- 3. Parents' and Families' Influence on Adolescent Health
- 4. Schools and Discretionary Time

Part II: Prevention and Services Related to Selected Adolescent Health Concerns

Prevention and Services Related to Physical Health Problems

- 5. Accidental Injuries: Prevention and Services
- 6. Chronic Physical Illnesses: Prevention and Services
- 7. Nutrition and Fitness Problems: Prevention and Services
- 8. Dental and Oral Health Problems: Prevention and Services

Prevention and Services Related to Sexually Transmitted Diseases and Pregnancy

- 9. AIDS and Other Sexually Transmitted Diseases: Prevention and Services
- 10. Pregnancy and Parenting: Prevention and Services

Prevention and Services Related to Mental Health Problems

- 11. Mental Health Problems: Prevention and Services
- 12. Alcohol, Tobacco, and Drug Abuse: Prevention and Services

Prevention and Services Related to Delinquency and Homelessness

- 13. Delinquency: Prevention and Services
- 14. Homelessness: Prevention and Services

Appendix

- A. Glossary of Abbreviations and Terms

VOLUME III: CROSSCUTTING ISSUES IN THE DELIVERY OF HEALTH AND RELATED SERVICES

- 15. Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents
- 16. Financial Access to Health Services
- 17. Consent and Confidentiality in Adolescent Health Care Decisionmaking
- 18. Issues in the Delivery of Services to Selected Groups of Adolescents
- 19. The Role of Federal Agencies in Adolescent Health

Appendixes

- A. Glossary of Abbreviations and Terms
- B. Burden of Health Problems Among U.S. Adolescents
- C. HCFA's Method for Estimating National Medicaid Enrollment and Expenditures for Adolescents

Department of Pediatrics at Montefiore Hospital, was vice-chair of the Advisory Panel.

The first meeting of the Adolescent Health Advisory Panel was held on October 26, 1988. At that meeting, the panel discussed the purpose of the study, the plan and organization of the study, background materials, and key issues to be included in the study. Preliminary drafts of the entire report were reviewed by members of the Advisory Panel and discussed at meetings of the panel members in May 1989 and March 1990. Following these meetings, OTA staff incorporated revisions and sent the new drafts to the panel members for their comments. In addition, the entire draft, each contributing contractor paper, and each chapter were reviewed by the Advisory Panel and by relevant outside experts. Taken together, more than 500 individuals reviewed aspects of the report (see app. B, "Acknowledgments"). The final draft was sent to the Technology Assessment Board in late July 1990.

Youth Advisory Panel

An unusual feature of OTA's adolescent health assessment was that it included a Youth Advisory Panel to

Box A-2—Requesters of OTA's Adolescent Health Report (with current committee chair or ranking minority assignments)

Senator Daniel K. Inouye, Chairman of the Senate Select Committee on Indian Affairs;
Senator Nancy Landon Kassebaum, Ranking Minority Member of the Subcommittee on Education, Arts, and Humanities of the Senate Committee on Labor and Human Resources;
Senator Bob Dole, Minority Leader of the Senate;
Senator Robert C. Byrd, Chairman of the Senate Committee on Appropriations;
Representative William H. Gray, III, Majority Whip of the House of Representatives;
Senator James M. Jeffords, Ranking Minority Member of the Subcommittee on Labor of the Senate Committee on Labor and Human Resources;
Senator Orrin G. Hatch, Ranking Minority Member of the Senate Committee on Labor and Human Resources;
Senator Edward M. Kennedy, Chairman of the Senate Committee on Labor and Human Resources;
Senator Quentin W. Burdick, Chairman of the Senate Committee on Environment and Public Works;
Senator Mark O. Hatfield, Ranking Minority Member of the Senate Committee on Appropriations;
Senator Alan K. Simpson, Assistant Minority Leader of the Senate;
Senator Alan Cranston, Chairman of the Senate Committee on Veterans Affairs;
Senator Ted Stevens, Ranking Minority Member of the Senate Committee on Rules and Administration;
Senator Bob Packwood, Ranking Minority Member of the Senate Committee on Finance;
Senator Charles Grassley, Member of the Technology Assessment Board;
Senator Barbara Mikulski, Chairman of the Subcommittee on Veterans Affairs, Housing and Urban Development, and Independent Agencies of the Senate Committee on Appropriations;
Senator Ernest Hollings, Chairman of the Senate Committee on Commerce, Science, and Transportation;
Senator Arlen Specter, Ranking Minority Member of the Subcommittee on Veterans Affairs;
Representative Henry A. Waxman, Chairman of the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce;
Senator Daniel K. Akaka;
Representative Morris K. Udall, Chairman of the House Committee on Interior and Insular Affairs;
Senator Frank H. Murkowski, Vice Chairman of the Senate Select Committee on Intelligence;
Senator Christopher J. Dodd, Chairman of the Subcommittee on Children, Family, Drugs, and Alcohol of the Senate Committee on Labor and Human Resources;
Senator Claiborne Pell, Chairman of the Senate Committee on Foreign Relations;
Senator Dale Bumpers, Chairman of the Senate Committee on Small Business;
Senator Lloyd Bentsen, Chairman of the Senate Committee on Finance;
Senator Daniel P. Moynihan, Chairman of the Subcommittee on Social Security and Family Policy of the Senate Committee on Finance;
Senator John D. Rockefeller, IV, Chairman of the Subcommittee on Medicare and Long Term Care of the Senate Committee on Finance;
Representative Don Young, Ranking Minority Member of the House Committee on Interior and Insular Affairs.

A letter of support was received from the House Select Committee on Children, Youth, and Families.

provide OTA staff with an adolescent perspective on the issues in the Report. The Youth Advisory Panel consisted of 21 individuals who ranged in age from 10 to 19. Panel members represented a range of backgrounds: racial/ethnic (white, non-Hispanic; Hispanic; Asian; black), socioeconomic, and experiential (e.g., homeless, substance use, pregnant, parenting, children of divorce, children from stepfamilies, and extended families). Although all were from the greater Washington, DC, metropolitan area, they came from central city, suburban, and rural areas. During meetings, the Youth Advisory Panel highlighted important health issues for adolescents, developed a list of desirable features of health services, and made recommendations to the project staff on ways to improve adolescent health. Representatives of the Youth Advisory Panel also attended various workshops and meetings held by OTA. Members of OTA's Youth Advisory Panel are listed in box A-3.

Workshops

During the course of the study, OTA project staff convened five workshops to discuss various issues relating to adolescent health. Three of these workshops (the second, third, and fifth workshops) were supported by the Carnegie Council on Adolescent Development.

- The first workshop, on American Indian and Alaska Native adolescents' mental health, was held on December 12-13, 1988, in Albuquerque, New Mexico.
- The second workshop, on health service delivery to adolescents, was held at OTA on August 1-2, 1989. At this workshop, participants discussed the availability, access, effectiveness, and appropriateness of various services for adolescents in such areas as mental health, substance abuse, child welfare; in the

Photo credit: Office of Technology Assessment

An unusual feature of OTA's adolescent health assessment was the involvement of a panel of 10- to 19-year-olds who advised OTA.

mainstream health care system; and in alternative organizational settings such as school-linked health centers and free clinics. Workshop participants responded to drafts prepared by OTA contractors.

- In the third workshop, on the role of Federal agencies in adolescent health, representatives from relevant Federal departments and agencies discussed issues relating to the nature and scope of the Federal role in adolescent health. This workshop was held at OTA on October, 11, 1989.
- The fourth workshop, on socioeconomic and cultural/ethnicity issues in the delivery of health services to adolescents, was held on December 18-19, 1989, at OTA. At this workshop, parties responded to first drafts of papers prepared by OTA contractors.
- On March 28, 1990, OTA held a final workshop to discuss how various policy options of the Report could incorporate an approach that was less focused on health problems and more oriented to health promotion.

Workshop attendees included adolescent health care providers, academics, and adolescents. Participants of all five of the workshops are listed at the end of this appendix.

Box A-3—Youth Advisory Panel for OTA's Adolescent Health Report

Derrick Barnes
Washington, DC

Steven Bell
Burke, VA

Alex Ching
Silver Spring, MD

Steven Faller
Upper Marlboro, MD

Sherry Felix
Washington, DC

Veronica Green
Washington, DC

Sean Greene
Washington, DC

Lourdes Gutierrez
Washington, DC

Gregory Hunter
Springfield, VA

Talynthia Jones
Washington, DC

Sharon Knarvik
Washington, DC

Rachelle Lewis
Washington, DC

Jonathan Polanin
Greenbelt, MD

Bounhome Sayboune
Hyattsville, MD

Rattana Sengsy
Hyattsville, MD

Jennifer Smith
Suitland, MD

Reagan Thomason
Burke, VA

Tulsa Williams
Washington, DC

Michael Wilson
Roundhill, VA

Survey of Federal Agencies and Site Visits

In preparation for the workshop on the role of Federal agencies, OTA staff conducted a survey of various Federal agencies in August 1989 to determine the scope and level of activity at the Federal level regarding adolescent health. The results of the survey are presented in chapter 19, "The Role of Federal Agencies in Adolescent Health," in Volume III.

In addition to conducting workshops and a survey of Federal agencies, OTA staff made site visits, conducted literature reviews, and performed other research activities. Project staff visited various programs in Los Angeles, San Francisco, New Jersey, New York, Boston, and Washington, DC, designed for adolescents. These visits included school-linked health centers, community-based adolescent health centers, hospital-based and health maintenence organization-based adolescent clinics, youth serving organizations, and various programs for special groups, such as homeless adolescents and delinquents.

Contractor Papers

Thirty-one contractor papers were commissioned by OTA during the course of the study on adolescent health and are listed below.[1] The National Technical Information Service (NTIS) in Springfield, VA, has copies of most of the contractor papers; the NTIS classification numbers are listed beside the specific contractor paper. For additional information, call NTIS at (703) 487-4600.

- LaRue Allen, Ph.D., University of Maryland, and Christina Mitchell, Ph.D., New York University, *Poverty and Adolescent Health** (NTIS No. PB 91-154 385/AS)
- Trina Anglin, M.D., Ph.D., Cleveland Metropolitan General Hospital, *Health Service Delivery to Adolescents**
- Lois Bergeisen, Gaithersburg, MD, *Indian Adolescent Physical Health*
- Barbara Burns, Ph.D, Duke University, Carl A. Taube, Ph.D, Johns Hopkins University, and John E. Taube, University of Maryland, *Mental Health Services for Adolescents** (NTIS No. PB 91-154 344/AS)
- Barbara Burns, Ph.D, Duke University, Carl A. Taube, Ph.D, Johns Hopkins University, and John E. Taube, University of Maryland, *Use of Mental Health Sector Services by Adolescents: 1975, 1980, 1986** (NTIS No. PB 91-154 344/AS)
- Paul Casamassimo, D.D.S., M.S., Children's Hospital, Columbus, OH, *Adolescent Dental and Oral Health* (NTIS No. PB 91-154 336/AS)
- Johanna Dwyer, D.Sc., R.D., New England Medical Center Hospital, and Carol N. Meredith, University of California at Davis, *Great Expectations: Adolescent Nutrition and Fitness*
- James Emshoff, Ph.D. and Ronnie Margolin, Georgia State University, *Treatment of Adolescent Substance Abuse: A National Review and Critique** (NTIS No. PB 91-154 344/AS)
- Mathea Falco, J.D., New York, NY, *Primary Prevention of Alcohol, Tobacco, and Drug Use by Adolescents*
- Ronald A. Feldman, Ph.D., Columbia University, *How Can Society Contribute to Meaningful Use of Adolescents' Spare Time?* (NTIS No. PB 91-154 328/AS)
- Michelle Fine, Ph.D., University of Pennsylvania, *Middle and Secondary School Environments as They Affect Adolescent Well-Being* (NTIS No. PB 91-154 328/AS)
- James Garbarino, Ph.D., Erikson Institute, *Adolescent Victims of Maltreatment* (NTIS No. PB 91-154 310/AS)
- Josephine Gittler, J.D., Mary Quigley-Rick, J.D., and Michael J. Saks, Ph.D., University of Iowa, *Adolescent Health Care Decisionmaking: The Law and Public Policy** (available from Carnegie Council on Adolescent Development, Washington, DC 202/429-7979)
- Angela Holder, LL.M., Yale University, *Legal and Ethical Issues Related to Adolescents' Participation in Research and Data Collection on Health and Related Topics** (NTIS No. PB 91-154 377/AS)
- Jonathan Klein, M.D., M.P.H., Milton Kotelchuck, Ph.D., and Gordon H. DeFriese, Ph.D., University of North Carolina at Chapel Hill, *Critical Evaluation of Comprehensive Multi-Service Delivery Systems for Adolescents: A Framework for Evaluation of Effectiveness and a Feasibility Analysis**
- Barry Krisberg, Ph.D., National Council on Crime and Delinquency, *Juvenile Justice: A Critical Examination** (NTIS No. PB 91-154 351/AS)
- Richard Kronick, San Diego, CA, *Adolescent Health Insurance Status: Analyses of Trends in Coverage and Preliminary Estimates of the Effects of an Employer Mandate and Medicaid Expansion on the Uninsured** (available from GPO (telephone number 202/783-3238); stock number 052-003-01160-3)
- Richard Kronick, San Diego, CA, *Update: Adolescent Health Insurance Status** (NTIS No. PB 91-154 369/AS)
- Spero Manson, Ph.D., University of Colorado, *Indian Adolescent Mental Health* (available from GPO (telephone number 202/783-3238); stock number 052-003-01175-1)
- Margaret McManus, Harriette Fox, Paul Newacheck, Lori Wicks, and Rebecca Kelly, McManus Health Policy, Inc., *Medicaid Coverage of Adolescents* (NTIS No. PB 91-154 369/AS)
- Gary B. Melton, Ph.D. and Lois B. Oberlander, M.A., University of Nebraska-Lincoln, *The Health of Rural Adolescents* (NTIS No. PB 91-154 385/AS)
- Scott Menard, Ph.D., University of Colorado, *The Epidemiology of Minor Offending in Adolescence* (NTIS No. PB 91-154 351/AS)
- Larry Mi'ike, M.D., J.D., University of Hawai'i, *Health and Related Services for Native Hawaiian Adolescents** (NTIS No. PB 91-154 385/AS)
- Edward P. Mulvey, Ph.D., Michael A. Arthur, M.A., and N. Dickson Reppucci, Ph.D., University of Pittsburgh, *Review of Programs for the Prevention and Treatment of Delinquency* (NTIS No. PB 91-154 351/AS)
- D. Wayne Osgood, Ph.D. and Janet K. Wilson, University of Nebraska-Lincoln, *Covariation Among Health-Compromising Behaviors in Adolescence** (NTIS No. PB 91-154 377/AS)
- Carol Runyan, M.P.H., Ph.D., Elizabeth A. Gerken, M.S.P.H., and Laura S. Sadowski, M.D., M.P.H.,

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[1] The 16 papers marked with an asterisk are papers for which funding was provided by the Carnegie Corporation of New York and the Carnegie Council on Adolescent Development.

University of North Carolina, *Unintentional Injury Among Adolescents* (NTIS No. PB 91-154 336/AS)

- Stanley Sue, Ph.D., University of California, Los Angeles, and Nolan Zane, University of California at Santa Barbara, *Health and Related Services for Asian American Adolescents** (NTIS No. PB 91-154 385/AS)
- Dalmas A. Taylor, Ph.D., Wayne State University, and Phyllis A. Katz, Ph.D., Institute for Research on Social Problems, *Health and Related Services Available to Black Adolescents** (NTIS No. PB 91-154 385/AS)
- H. Rutherford Turnbull, Esq., J.D., LL.M., and Lisa Dorrill, M.A., University of Kansas, *Health Care Services for Adolescents With Developmental Disabilities*
- Robert Valdez, Ph.D., University of California, Los Angeles, *Factors Affecting Latino Adolescents' Health and Health Care Use** (NTIS No. PB 91-154 385/AS)
- Margaret West, M.S.W., Ph.D. and Sally N. Stuart, M.S.W., University of Washington, *Child Welfare Services for Adolescents** (NTIS No. PB 91-154 310/AS)

Participants in Workshops on Adolescent Health

Workshop #1—American Indian and Alaska Native Adolescents: Mental Health Problems and Services

Teresa LaFromboise, *Chair*
School of Education, Stanford University
Stanford, CA

Marva Benjamin
Minority Initiative Director
Child and Adolescent Service System Program
Technical Assistance Center
Georgetown University Child Development Center
Washington, DC

Irving Berlin
Professor
Division of Child and Adolescent Psychiatry
Department of Psychiatry
School of Medicine
University of Mexico
Albuquerque, NM

J.R. Cook
Executive Director
United National Indian Tribal Youth, Inc.
Oklahoma City, OK

Paul Dauphinais
School Psychologist
Turtle Mountain Community School
Bellcourt, ND

Kathryn Manness
Coordinator
American Indian Program Development
Los Angeles, CA

Philip May
Assistant Professor
Department of Sociology
University of New Mexico
Albuquerque, NM

Henry Montes
Program Officer
Health Promotion Program
Henry J. Kaiser Family Foundation
Menlo Park, CA

Leonard Saxe
Visiting Professor
Bigel Institute
Florence Heller School
Brandeis University
Waltham, MA

Judi Siegfried
Director
Service Center
Pueblo of Laguna
Old Laguna, NM

Norine Smith
Director
Indian Health Board
Minneapolis, MN

Evelyn Tucker
Anchorage, AK

Indian Health Service:

Albert Hiat
Chief
Children's Program
Indian Mental Health Branch
Indian Health Service
Albuquerque, NM

Scott Nelson
Chief
Indian Mental Health Branch
Indian Health Service
Rockville, MD

Bureau of Indian Affairs:

Joe Little
Chief
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Appendix C

ISSUES RELATED TO THE LACK OF INFORMATION ABOUT ADOLESCENT HEALTH AND HEALTH AND RELATED SERVICES

In this Report, OTA was able to draw broad general conclusions about the prevention and treatment of adolescent health problems, but it is important to note that OTA's analysis was often severely hampered by insufficient information. A paucity of information about adolescent health concerns makes definitive conclusions about the extent of health problems among U.S. adolescents and about the availability and appropriateness of efforts to prevent and treat the problems (and promote positive adolescent health) difficult to draw. This paucity of information deserves specific attention in and of itself because it is an area particularly amenable to Federal attention.[1]

The assessment of adolescent health and health care is impeded by a paucity of information in two main areas:

1. information related to the health status of adolescents, and
2. information on prevention- and treatment-oriented health services available to adolescents.

Limitations of Information on Adolescents' Health Status

Efforts to assess the health status of adolescents are universally stymied by at least two barriers: 1) limited conceptualizations of health, and 2) unusable and inconsistent aggregations of data by age, which in combination with small sample sizes, make analyses of available health status information difficult.

Indicators of health status are typically disease focused, with mortality due to natural causes and physician visits for disease being two of the few outcomes measured. Examples of such indicators appear in two publications of the U.S. Department of Health and Human Services (DHHS), *Health, United States, 1989* (289) and *Healthy People* (260).

As discussed elsewhere in this Report, definitions of health are in flux; thus, it is difficult to define all the parameters of health for any given population.[2] Even for the parameters of adolescent health that have generally been agreed upon, however, data are rarely collected in any one place. For OTA's Adolescent Health Report (and similar compilations of data[3]), therefore, it was necessary to derive data from a variety of sources, and to request special data analyses.[4] For many important adolescent problems (e.g., nonfatal accidents, sexually transmitted diseases, delinquency, mental health problems, homelessness), there are no reliable sources of national data.

Aggregations of Data by Age Groupings

There is no single agreed-upon definition of adolescence, and chronological age is a poor proxy for developmental status (150); criticisms of current data collection by age groupings may therefore seem out of place. Currently, however, most published data make it difficult to disaggregate data for any semblance of an adolescent age group, especially if one considers the onset of puberty (which generally occurs between ages 10 and

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[1] As noted in OTA's 1988 report, *The Quality of Medical Care: Information for Consumers*, there is a consensus, if not unanimity, that the Federal Government should play a central role in the collection and dissemination of information (225).

[2] See box A, in "Major Findings," and ch. 2, "What Is Adolescent Health?" in Vol. II, for a discussion of the ways in which adolescent health has been conceptualized.

[3] Recent examples of compilations of adolescent health status data include the American Medical Association's publication, *America's Adolescents: How Healthy Are They?* (8); the Carnegie Council on Adolescent Development's publication, *Turning Points: Preparing American Youth for the 21st Century* (29); the National Center for Education in Maternal and Child Health's publication, *The Health of America's Youth* (150); and the National Commission on the Role of the School and the Community in Improving Adolescent Health's publication, *Code Blue: Uniting for Healthier Youth* (153).

[4] For information about adolescents' sexual activity, for example, OTA sought information from the National Survey of Family Growth conducted by the National Center for Health Statistics in DHHS; for information about deaths, national vital statistics maintained by the National Center for Health Statistics in DHHS; for information about health care utilization, the National Ambulatory Medical Care Survey and the National Health Interview Survey conducted by the National Center for Health Statistics in DHHS; for information about school attendance, the U.S. Department of Education; for information about drug use, the National Household Survey of Drug Use conducted by the National Institute on Drug Abuse in DHHS, the Monitoring the Future/High School Seniors Survey conducted by University of Michigan researchers under contract to the National Institute on Drug Abuse in DHHS, and school surveys sponsored by the Centers for Disease Control in DHHS; for information about delinquency, the Uniform Crime Reports of the Federal Bureau of Investigation within the U.S. Department of Justice.

14) to be the beginning of adolescence.[5] [6] Only recently has the Bureau of Maternal and Child Health in DHHS published a volume on the health of youth in which some limited data are reported for 10- to 14- and 15- to 19-year-olds (150).

Because of the many problems in aggregations of data, even the assembly of data to describe adolescent health using admittedly gross indicators such as age becomes a major task. Not surprisingly, therefore, *there is no regular monitoring of U.S. adolescents' health.*

Small Sample Sizes

The problem of unusable aggregations of data would be amenable to solution by interested researchers if sample sizes were large enough so that individual years of age could be disaggregated and reaggregated, although conducting these reaggregations would be difficult because of difficulties in gaining access to the data.[7] Disaggregating and reaggregating data is sometimes possible (e.g., mortality data, arrest data). Often, however, that approach is impossible because the data have been collected by methods that do not oversample for adolescents. Surveys that do not oversample for adolescents include the National Hospital Discharge Survey (NHDS),[8] the National Ambulatory Medical Care Survey (NAMCS), the National Health and Nutrition Examination Survey (NHANES III),[9] and the National Drug and Alcoholism Treatment Unit Survey (NDATUS).[10]

The problem of small sample sizes becomes particularly acute when attempts are made to assess the health status of adolescents by region, residence,[11] race, ethnicity, age, sex, or socioeconomic status. Such analyses are important when one is attempting to identify groups of adolescents or geographic areas in special need of services. NHANES III, currently in the field, illustrates the problem. NHANES III is scheduled to collect data from only 1,120 black, 1,120 Hispanic, and 980 "white and other" 12- to 19-year-olds. With an estimated 34.762 million 12- to 19-year-olds in the United States in 1989, each adolescent surveyed will have to represent 10,796 adolescents of that age group. Thus, one would expect that only broad generalizations about adolescent health will be able to be made from NHANES III.[12]

Information on Income Status

OTA was consistently frustrated in attempts to disaggregate differences in health status apparently associated with race and ethnicity from differences truly associated with family income, primarily because information on income (unlike information on race and ethnicity) is almost never collected along with health information. As a result, problems which are often attributed to problems associated with one race or another may in fact be more properly attributed to socioeconomic (or other) differences.

Information on Health From the Perspective of Adolescents

One of the hallmarks of adolescent development is the increasing ability to evaluate one's self and surroundings. A perhaps related hallmark is the tendency to withhold information from others in one's immediate environment, such as parents. Rarely, however, are U.S. adolescents asked to report about aspects of their health other than their engagement in problem behaviors.

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[5] See ch. 2, "What Is Adolescent Health?" in Vol. II, for a discussion of adolescent development.

[6] Age groupings in widely available data sources included the following: ages 5 to 14 and ages 15 to 24 in mortality data published in *Health, United States, 1989* (289); ages 5 to 14 and ages 15 to 44 in National Health Interview Survey data on physician utilization published in *Health, United States, 1989*; ages 15 to 24 (with no younger ages reported) in information on methods of contraception from the National Survey of Family Growth published in *Health, United States, 1989*; ages 15 and under and ages 15 to 24 in various data published in *Health, United States, 1989* and in *Healthy People* (260); less than age 18 and ages 18 to 19 in data on age of mother at birth of child published in *Health, United States, 1989*; under age 18 and ages 18 to 44 in data on specific chronic and acute conditions from the National Health Interview Survey (286); under age 18 and over age 18 in data on arrests from the U.S. Department of Justice (303); under age 18 and ages 18 to 64 in Current Population Report data on poverty status from the Census Bureau of the U.S. Department of Commerce (246); and 8th graders, 10th graders, and both grades combined in a unique national survey of adolescent attitudes (10). Other sources of data, with finer age categories are published, but are not widely available.

[7] More Federal data collection agencies are making data available electronically, but manipulation of the data requires special skills and access to appropriate computer software and hardware. Obtaining data from extragovernmental sources may be difficult because such data analyses are subject to long publication processes (if conducted by independent researchers) or because the analyses are kept by a local agency and not distributed.

[8] Technically, NHDS, NAMCS, NDATUS, and the National Institute of Mental Health's surveys of mental health organizations involve data about health care utilization, not health status. Sometimes, however, data from these sources are used to make inferences about health status. If health care utilization rates are low, for example, it is sometimes inferred that a population has good health. One problem with such an inference is that it does not take into account the possibility that low utilization rates may be caused by barriers to access.

[9] NHDS, NAMCS, and NHANES are discussed in ch. 6, "Chronic Physical Illnesses: Prevention and Services," in Vol. II.

[10] NDATUS is discussed in ch. 12, "Alcohol, Tobacco, and Drug Abuse: Prevention and Services," in Vol. II.

[11] In U.S. Census Bureau terminology, "residence" signifies metropolitan area, nonmetropolitan area, central city, etc. (109).

[12] The Centers for Disease Control in DHHS is instituting a cooperative program with State education departments to collect regular, locally relevant data on adolescent "risk behaviors" (277). It is important to note, however, that this effort is limited to self-report data on selected behaviors. Efforts like NHANES actually conduct health examinations of individual participants.

Limitations of Information About Health Promotion, Disease Prevention, and Treatment

Information on health care provided to U.S. adolescents is even more limited than information on such adolescents' health status.[13] Surveys of private office-based physician visits and analyses of hospital discharge data, for example, do not oversample for adolescent visits (or practitioners who might see adolescents), so inferences about the utilization of mainstream health care by adolescents are difficult to draw. There is no single source of information about nonphysician providers and other sources of health care for adolescents, including hospital-based and freestanding emergency rooms, school nurses, and school-linked health centers. Despite the problems, some broad inferences can be made about adolescents' utilization of mainstream sources of health care, but when the topic of interest is health care utilization by racial and ethnic minority adolescents, adolescents of varying levels of socioeconomic status, or adolescents in specific regions or residential areas, inferences are far more difficult to draw.[14]

Another problem is that numerical data on health care utilization do not address the important issue of whether care provided to adolescents is appropriate, effective, and satisfactory to the adolescent users. Either there are no or almost no evaluations (e.g., acne treatment, treatment for dysmenorrhea, substance abuse treatment, treatment in juvenile justice facilities, school-linked health services centers), or serious methodological flaws hamper efforts to draw conclusions from available evaluations. Many of the methodological flaws can be attributed to common problems (e.g., low base rate of the health problem, little funding for objective evaluations, inadequate requirements for methodological criteria).

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[13] As noted above, health care utilization data are sometimes used as the basis of inferences about health status; therefore, some sources of health utilization data (e.g., NAMCS, NHDS, NDATUS) were referred to above in the discussion of health status information.

[14] Such inferences are presented in Vol. III in ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Services to Adolescents." For further discussion, see ch. 18, "Issues in the Delivery of Services to Selected Groups of Adolescents," in Vol. III.

Appendix D

GLOSSARY OF ABBREVIATIONS AND TERMS

Abbreviations

AFDC —Aid to Families With Dependent Children
AIDS —acquired immunodeficiency syndrome
DHHS —U.S. Department of Health and Human Services
EPSDT —Early and Periodic Screening, Diagnosis, and Treatment program (Medicaid)
HCFA —Health Care Financing Administration
HIV —human immunodeficiency virus (AIDS virus)
OBRA-89 —Omnibus Budget Reconciliation Act of 1989 (Public Law 101-239)
OBRA-90 —Omnibus Budget Reconciliation Act of 1990 (Public Law 101-508)
OTA —Office of Technology Assessment (U.S. Congress)
STD —sexually transmitted disease

Terms

Access: Potential and actual entry of a population into the health care delivery system. Elements of access include availability, affordability, and approachability.

Accidental injury: An injury that is not self-inflicted or caused by *maltreatment* or other violence.

Acne (vulgaris): A chronic inflammatory disease of the pilosebaceous apparatus (i.e., hair follicles and sebaceous glands), the lesions occurring most frequently on the face, chest, and back. The cause is unknown.

Acute condition: A problem or disease of limited duration, as opposed to chronic. According to the DHHS National Center for Health Statistics, a condition is considered acute if: 1) it was first noticed no longer than 3 months before the reference date of the interview, and 2) it is not one of the conditions considered *chronic* regardless of the time of onset. However, any acute condition not associated with either at least one doctor visit or at least 1 day of restricted activity is considered to be of minor consequence and is excluded from the final data produced by the DHHS National Center for Health Statistics' *National Health Interview Survey.*

Addiction model: A model of treatment for alcohol and drug abuse based on the philosophy that once a person has become a problem user of alcohol or drugs, he or she will always be a problem user and should avoid any use of alcohol and drugs for life.

Adolescence: Definitions of adolescence vary, and many observers agree that a definition based on age alone is not sufficient. Adolescence typically takes place during the second decade of life, and is initiated by *puberty*, although physical and other changes occur (i.e., in height, weight, head size, facial structure, facial expression, and cognitive abilities). As used by OTA, adolescence most often refers to the period of life from ages 10 through 18. See *early adolescence, middle adolescence, late adolescence, younger adolescents, older adolescents.*

Adolescent health: Narrow definitions of adolescent health might be the absence of physical disease and disability and the absence of engagement in health-compromising behaviors that lead to the so-called "*new morbidities.*" A broader definition would also include positive components of health (e.g., social competence); health and well-being from the perspectives of adolescents themselves (e.g., perceived quality of life). A fully realized view of adolescent health would also consider the impact of social (e.g., families, schools, communities, policies) and physical (e.g., fluoridation, automobile and highway design and construction) influences on health and would be sensitive to developmental changes that occur during adolescence. See also *health.*

Advocacy: Refers to support, coordination and linkage to experts, individuals, groups, and institutions who may help adolescents. May be provided by parents or others known to an adolescent.

Age of majority: The age at which by law a person is entitled to the management of his or her own affairs and to the enjoyment of civic rights. Currently, the age of majority is set at age 18 in every State but Alaska, Nebraska, and Wyoming, where the age is 19.

Aggravated assault: See *assault.*

AIDS (acquired immunodeficiency syndrome): A disease caused by *human immunodeficiency virus (HIV)* and characterized by a deficiency of the immune system. The primary defect in AIDS is an acquired, persistent, quantitative functional depression within the T4 subset of lymphocytes. This depression often leads to infections caused by micro-organisms that usually do not produce infections in individuals with normal immunity. HIV infection can be transmitted from one infected individual to another by means that include the sharing of a contaminated intravenous needle and engaging in *unprotected sexual intercourse* (i.e., intercourse without the use of condoms).

Aid to Families With Dependent Children (AFDC) program: A program, established by the Social Security Act of 1935, providing cash payments to needy children (and their caretakers) who lack support because at least one parent is dead, disabled, continually absent from the home, or unemployed. Eligible families must meet income and resource criteria specified by the State.

Airbag: An automatically inflating bag in front of riders in an automobile to protect them from pitching forward into solid parts in case of an accident.

Alcohol abuse: See *substance abuse.*

Alcohol, drug abuse, and mental health (ADM) block grant: The major Federal program providing funds to States for outpatient alcohol, drug abuse, and mental health treatment programs. (Funds are not allowed to be used for *inpatient* services.) States receive a share of the ADM block grant appropriation through a formula based in part on the size of the State population (Subpart 1, part B of Title XIX of the Public Health Service Act). The ADM block grant consolidated funds that were formerly made available under a variety of categorical programs, most significantly programs under the Community Mental Health Centers Act of 1963. The ADM block grant is administered by the Office of Treatment Improvement in the Alcohol, Drug Abuse, and Mental Health Administration in DHHS.

Alternatives programs: Programs that provide alternatives to life in the drug culture, such as recreation and sports programs and outward bound-type camping efforts.

Ambulatory care: Health care services provided to patients who are not inpatients of hospitals or other residential facilities (e.g., residential treatment centers, nursing homes). It includes care provided in a hospital on an *outpatient* basis.

American Indians and Alaska Natives: See *Indian.*

Analgesic: Ingested substance that acts as a pain reliever.

Anticipatory guidance: Counseling about topics important to health, optimally provided before such problems have arisen.

Anxiety disorders: *Mental disorders* in which excessive anxiety is the primary symptom. **Separation anxiety disorder** involves irrational fears or panic about being separated from those to whom one is attached, usually the parent(s). While separation anxiety disorder is more common among children, it may continue into adolescence.

Arrest rate: The number of arrests made in a given population per some population base during a given time period.

Assault: Unlawful intentional inflicting, or attempted inflicting, of injury upon the person of another. **Simple assault** is the unlawful intentional inflicting of less than serious bodily injury without a deadly or dangerous weapon or an attempt or threat to inflict bodily injury without a deadly or dangerous weapon. **Aggravated assault** is the unlawful intentional inflicting of serious bodily injury or death by means of a deadly or dangerous weapon with or without actual infliction of injury.

Asthma: A disorder of the bronchial tubes, producing wheezing and difficulty in breathing.

"At risk": A phrase used to describe an adolescent in an environment, having an existing health problem, or exhibiting behavior, that may result in a poor *health outcome.*

Authoritative parenting: A combination of open communication, and give-and-take between parent and adolescent, in an environment of consistent support and firm enforcement of unambiguous rules. Authoritative parents are neither authoritarian (harsh, rigid, domineering), overindulgent, indifferent, nor rejecting.

Base rate: The *prevalence* or *incidence* of a problem in a population.

Behavioral problems: Behavior that disturbs or harms the adolescent or others. Includes the mental health problems termed *behavior disorders* (e.g., attention deficit disorder, *conduct disorder*). See *problem behaviors.* Compare *physical problems.*

Block grants—Sums of Federal funds allotted to State agencies (e.g., education, health) which may be passed onto local agencies. States determine the mix of services provided and the population served and are accountable to the Federal Government only to the extent that funds are spent in accordance with program requirements. Sometimes, however, set-asides are required for specific population groups.

Broad-based (programs): Typically, programs that take a comprehensive rather than a narrow approach to addressing a single health problem, such as by involving multiple service systems or strategies (e.g., a pregnancy prevention intervention that would involve teaching of life skills and vocational training, as well as provide sexuality education) and possibly by measuring multiple theoretically and practically related outcomes (e.g., avoidance of school dropout as well as pregnancy prevention).

Caries: See *dental caries.*

Categorical requirements: Requirements that an individual must fit a certain category of need in order to be eligible for assistance. See *Aid to Families With Dependent Children (AFDC) program.*

Cerebral palsy: Any paralysis or other dysfunction due to perinatal damage to the motor areas of the brain. Perinatal damage is damage taking place around the time of birth.

Child allowances: Sums provided to parents based on the number of children in the household.

Child welfare services: See *social services.*

Children's protective services: See *protective services.*

Chlamydia: A *sexually transmitted disease* that is characterized by infection with the bacterial agent *Chlamydia trachomatis.* Infection with this bacterial agent can cause nongonococcal urethritis and other syndromes (e.g., genital ulceration) and may lead eventually to meningitis, pneumonia, blindness, and cervical atypia.

Chronic condition: A problem or disease that is lingering and lasting, as opposed to acute. For purposes of DHHS's *National Health Interview Survey*, a condition is considered "chronic" if: 1) the respondent indicates it was first noticed more than 3 months before the reference date of the interview and it exists at the time of the interview, or 2) it is a type of condition that ordinarily has a duration of more than 3 months. Examples of conditions that are considered chronic regardless of their time of onset are diabetes, heart conditions, emphysema, and arthritis.

Civilian Health and Medical Program of the Uniformed Services (CHAMPUS): A health insurance program, administered by the U.S. Department of Defense, that provides health benefits to military dependents and retirees who are unable to receive services through uniformed service medical treatment facilities.

Clinical trial: A scientific research activity undertaken to define prospectively the effect and value of prophylactic, diagnostic, or therapeutic agents, devices, regimens, procedures, etc., applied to human subjects.

Cocaine: An addictive *psychoactive substance* obtained from coca leaves that is a central nervous system stimulant.

Cognitive interventions (in health care): Interventions that rely heavily on interpersonal interaction (e.g., counseling) as opposed to more impersonal (technical) services.

Cognitive skills: Specific skills relevant to higher order reasoning and critical thinking. Often part of *life-skills training* programs.

Common law: As distinguished from statutory law created by a legislature, the body of principles and rules of action which derive their authority solely from long-standing usages and customs (in particular, Anglo-American usages and customs) or from the judgments and decrees of the courts recognizing, affirming, and enforcing such usages and customs.

Common law rule: A rule grounded in common law (see above) rather than in statutory law.

Community-based comprehensive health centers: Used to refer to those centers providing *comprehensive health and/or related services* that are situated in the adolescents' home community, but are not *school-linked.*

Competence (to make health care decisions): Having sufficient knowledge, judgment, or skill to make health care decisions. The legal concept of competency is central to existing laws governing health care decisionmaking with respect to minors, and the *parental consent requirement* is partially an outgrowth of the presumption that minors are incompetent to make health care decisions.

Comprehensive services for adolescents: The elements of comprehensive health and related services for adolescents are not entirely agreed upon. They include, at a minimum, care for acute physical illnesses, general medical examinations in preparation for involvement in athletics, mental health counseling, laboratory tests, *reproductive health care, family counseling*, prescriptions, *advocacy*, and coordination of care; the more comprehensive may include educational services, vocational services, legal assistance, recreational opportunities, child care services and parenting education for adolescent parents. Not all services are available at all centers, but a well-functioning comprehensive services center would provide for the coordinated delivery of care both within the center and between the center and outside agencies and providers.

Condition: A general term that includes any specific illness, injury, or impairment.

Condition-specific: A program or policy relevant to a specific illness, injury, impairment, or other health or related concern, as opposed to an entire population and its health concerns (e.g., women, minorities, children, adolescents).

Condom: A sheath commonly made of rubber worn over the penis for the purpose of preventing conception or the transmission of *AIDS* or other *sexually transmitted diseases.*

Conduct disorder: A *mental disorder* diagnosed on the basis of a pattern of behavior (lasting at least 6 months) in which a young person violates others' rights as well as age-appropriate social norms and displays at least 3 of 13 specified behavioral symptoms (e.g., truancy, lying, stealing, fighting).

Confidentiality (of the physician/patient relationship): The state or quality of being confidential, that is intended to be held in confidence or kept secret. Courts and legislatures have established a physician-patient privilege to protect the confidentiality of communications between physicians and their patients and have established similar privileges to ensure the confidentiality of communications between other types of health care providers and their patients or clients. By and large, the confidentiality of the relationship between health service providers and minors and the disclosure of confidential information by health service providers to the parents of minors or other third parties are not addressed in case or statutory law. See also *parental consent requirement* and *parental notification.*

Congenital: Existing at birth.

Consent: See *informed consent, parental consent requirement.*

Contraception: The prevention of conception or impregnation by any of a variety of means, including periodic abstinence (rhythm method); control of ejaculation (coitus interruptus); the use of spermicidal chemicals in jellies or creams; mechanical barriers (e.g., condoms, caps, or diaphragms); prevention of implantation (e.g., intrauterine device); the use of synthetic hormones to control the female reproductive cycle (e.g., the oral contraceptive pill); and sterilization of the male or female partner.

Covariation: The tendency of health problems to occur in the same individual at approximately the same time. The problems may have a single common cause, or one problem may be the cause of another.

Crisis intervention services: A not well-defined set of mental health services that can include crisis telephone lines (i.e., hot lines), emergency outpatient services, and a range of crisis-oriented outreach services such as *home-based care* and mobile crisis teams.

Culturally competent: A set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals and enables that system, agency, or those professionals to work effectively in cross-cultural situations. A culturally competent system of care acknowledges and incorporates—at all levels—the importance of culture, the assessment of cross-cultural relations, vigilance towards the dynamics that result from cultural differences, the expansion of cultural knowledge, and the adaptation of services to meet culturally unique needs. See *culture.*

Culture: Implies the integrated pattern of human behavior that includes thoughts, communications, actions, customs, beliefs, values, and institutions of a racial, ethnic, religious or social group.

Cystic fibrosis: An autosomal recessive disorder caused by the production of a unique glycoprotein that results in abnormal mucous secretions. It is one of the most common genetic diseases in caucasian children, and is most often seen in children and young adults. It is usually fatal before age 20. Death is due to excess mucus in the lungs and to pancreatic insufficiency.

Day treatment: A nonresidential mental health service that provides an integrated set of educational, counseling, and family interventions which involve a child or adolescent for at least 5 hours a day, and that can be provided in school setting, community mental health centers, hospitals or elsewhere in the community. Day treatment programs that are provided in hospitals are referred to as partial hospitalization. Day treatment is considered the most intensive of the nonresidential services that can continue over a longer period of time.

Death rate: The number of deaths per some portion of a population, usually 100,000 individuals.

Decisionmaking skills: Skills relevant to the ability to make rational, health-promoting decisions about one's life. Often a part of *life-skills training* interventions.

Delinquent behavior: Includes two types of acts: 1) acts committed by minors that would be considered crimes if committed by an adult, and 2) status offenses (i.e., acts that are offenses solely because they are committed by a juvenile, such as running away from home, truancy). See *minor offenses* and *serious offenses.*

Demonstration project: An intervention that is typically in an experimental (unproven) stage of effectiveness and is supported for a limited period with an evaluation component.

Dental caries: The localized, progressive decay of a tooth, starting on the surface, and if untreated, extending to the inner tooth chamber and resulting in infection.

Dental and oral health: The term dental means of or relating to the teeth or dentistry (the health profession that cares for teeth); and the term oral means of or relating to all aspects of the oral cavity (such as the gums and the tongue). Thus, dental and oral health refers to the health of these structures.

Dependency ratio: The number of children and elderly people per every 100 people of working age.

Depression: A mental disorder characterized by prolonged and intense feelings of worthlessness, hopelessness, or irritability and thoughts of death or suicide.

Designated driver (programs): The practice of a group designating a person in the group to not drink alcohol and to be the driver for others who may be drinking beverage alcohol.

Development: A process of growth and differentiation by successive changes. In humans, includes *physiological* development; cognitive development (increasing ability to think critically and engage in higher order reasoning); ego development (qualitatively different psychosocial stages, including internalization of the rules of social intercourse, increasing cognitive complexity and tolerance of ambiguity, and growing objectivity); and moral development (changes in the ability to recognize and reason about moral dilemmas and to make choices based on moral principles and reasoning).

Developmentally appropriate: Health promotion, prevention, and treatment services and environments designed so that they fit the emotional, behavioral/experiential, and intellectual levels of the individual who is to benefit from the service. Because of the asynchronous development within even individual adolescents (as well as individuals in other age categories), designing programs so that they are developmentally appropriate is a distinct challenge.

Diagnosable mental disorders: Disorders included in the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders*, 3d ed., revised.

Disability: A term used to denote the presence of one or more functional limitations. A person with a disability has a limited ability or an inability to perform one or more basic (daily) life functions (e.g., walking) at a level considered "typical."

Discretionary spending programs (in the Federal budget): Those spending programs subject to the annual appropriations process. Compare *entitlement programs.*

Discretionary time: That portion of time during which individuals are not engaged in mandatory or maintenance activities (e.g., school, work, sleeping, eating).

Disease: Any deviation from or interruption of the normal structure of function of any part, organ, or system (or combination thereof) of the body that is manifested by a characteristic set of symptoms and signs and whose etiology, pathology, and prognosis may be known or unknown.

Domestic discretionary spending: As defined by the Budget Enforcement Act of 1990 (Title XIII of OBRA-90 [Public Law 101-508]), discretionary spending that is related to domestic programs (i.e., not to the military or to assist foreign governments).

Dropout rate: School dropout rates can be defined in several ways. As defined in this Volume, the dropout rate is the **status dropout rate**, or the proportion of a particular group of individuals (usually an age cohort) who are not enrolled in school and have not finished high school at a particular point in time. Compare *graduation rate.*

Dysmenorrhea: Difficult and painful menstruation.

Early adolescence: A period encompassing the profound physical and social changes that occur with *puberty*, as maturation begins and social interactons become increasingly focused on sex (e.g., on members of the opposite sex). Typically takes place from ages 10 through 14. Compare *middle adolescence, late adolescence, younger adolescents, older adolescents.*

Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program: A State and federally funded, State-administered program under Medicaid that is intended to provide preventive screening exams and followup services for illnesses, abnormalities, and treatable conditions to Medicaid-eligible children under age 21.

Early intervention: Treatment services delivered before a problem becomes serious and/or chronic.

Education for All Handicapped Children Act: The Education for All Handicapped Children Act (Public Law 94-142) mandates that all physically and mentally handicapped children be provided a free, appropriate education and the "related services" necessary to obtain an education. The Federal Government provides a small amount of grant money to States to help them implement this law.

Educational neglect: As defined by DHHS's National Center on Child Abuse and Neglect, educational neglect can take several forms: permitted chronic truancy, failure to enroll a school-aged child in school, causing the child to miss school for nonlegitimate reasons, and inattention to special educational need (e.g., refusal to allow or failure to obtain recommended remedial educational services).

Educationally based preventive interventions: Preventive interventions that rely primarily on educating the target group. See *health education.* Compare *health protection* and *preventive strategies.*

Educationally disadvantaged: Having difficulties in learning not related to sheer exertion of effort (although motivational difficulties can also prove a disadvantage).

Effectiveness: Same as *efficacy* (see below) except that it refers to ". . .average or actual conditions of use."

Efficacy: The probability of benefit to individuals in a defined population from a health care technology applied for a given health problem under ideal conditions of use.

Emotional abuse: As defined by DHHS's National Center on Child Abuse and Neglect, emotional abuse takes three different forms: close confinement, such as tying or binding, or other tortuous restriction of movement; verbal or emotional assault (e.g., habitual patterns of belittling, denigrating, or scapegoating); and other overtly punitive, exploitative, or abusive treatment other than those specified under other forms of abuse (e.g., deliberate withholding of food).

Emotional neglect: As defined by DHHS's National Center on Child Abuse and Neglect, emotional neglect can take several forms: inadequate nurturance and affection; chronic or extreme spouse abuse in the child's presence; encouragement or permitting of drug or alcohol use by the child; permitting other maladaptive behavior; refusal of recommended, needed, and available psychological care; delay in psychological care; and other emotional neglect (e.g., other inattention to the child's developmental/emotional needs not classifiable under any of the above forms of emotional neglect, such as inappropriate application of expectations or restrictions).

Emotional problems: The mental health problems exhibited in the form of emotional distress (e.g., *anxiety* and *depressive disorders*); may include *subjective distress.* Compare *behavioral problems, physical problems.*

Employer mandate: A requirement imposed by the Federal Government on the States that requires employers to offer group health insurance policies and pay a significant amount of the premiums for all employees who work more than a specified number of hours per week.

Empowerment: Empowerment approaches take as a given that individuals, not just professionals, have a set of competencies, that these competencies are useful in the design and management of services, and, further, that those competencies can be even more fully developed by giving individuals additional opportunities to control their own lives. Empowerment is sometimes viewed as a *health promotion* strategy.

Entitlement programs: Programs that provide benefits paid out automatically to all who qualify unless there is a change in underlying law (examples include Federal employee retirement benefits, Medicare, *Medicaid*, unemployment compensation, *Aid to Families With Dependent Children*).

Epidemiological studies: Studies concerned with the relationships of various factors determining the frequency and distribution of specific diseases in a human community.

Ethnicity: A term used to indicate national origin (e.g., Hispanic). Most Census and health status information is available for individuals of *Hispanic* origin. Compare *race*.

Exploratory behavior: Behavior engaged in with the goal of exploring and learning about one's environment. May involve *risk-taking*.

Family counseling: Counseling provided to an entire family rather than solely to an individual.

Family planning: A range of services intended to help individuals plan when to have children, from counseling concerning the advisability of initiating sexual intercourse to the provision of contraceptive methods. See *contraception*.

Family planning programs authorized by Title X of the Public Health Service Act: Title X, established by the Family Planning Services and Population Research Act of 1970, funds public or private nonprofit entities that operate voluntary family planning projects; funds training for personnel to improve the delivery of family planning services; promotes service delivery improvement through research; and develops and disseminates information on family planning. Contraceptives may be distributed without parental consent or notification, but the use of Title X funds for abortion as a method of family planning has been prohibited by statute and regulations. Low-income individuals are targeted as a priority group for receiving services. Although projects funded by Title X do not focus exclusively on adolescents, they are required to offer a broad range of family planning services to all who want them, including adolescents.

Family structure: Used to describe whether a family consists of children and a single parent, two parents living with their biological child(ren), children living with a biological parent and a stepparent.

Firearm: A weapon from which a shot is discharged by gunpowder. The term firearm is usually used only of small arms. The term firearms includes guns (defined as portable firearms).

Fitness: Usually defined as cardiorespiratory or aerobic fitness, but may also include muscle strength, muscle endurance, flexibility, and low body fat.

Flexible worktime: Structure of individual work schedules so that they adapt to new, different, or changing requirements (e.g., of parents).

Fluoridation: The addition of a minute quantity of a fluoride (usually one part per million of fluoride ion) to drinking water supplies in order to protect growing children against *dental caries*. Fluoride can also be applied topically (in toothpaste and rinses).

Free clinic: Typically freestanding community-based health services centers that developed in the late 1960s and early 1970s largely in response to the needs of substance-abusing youth, many of whom were alienated from society at large and were unable or unwilling to receive medical care from traditional sources. Free clinics do not set eligibility requirements or charge fees for services provided. In general, free clinic services are provided by volunteers, with agency activities coordinated by a core of paid staff.

Freestanding (comprehensive) health services centers (for adolescents): Those centers not located within a school, *health maintenance organization*, hospital, or other facility.

Gonorrhea: A sexually transmitted disease caused by the bacterial agent *Neisseria gonorrhoeae*. Gonorrhea can lead to infertility, premature delivery, acute arthritis, and disseminated gonococcal infection.

Graduation rate: Graduation rates are calculated by dividing the number of high school graduates by the ninth grade enrollment 4 years earlier. Graduation rates by State are calculated by the U.S. Department of Education for public schools only because data on private high school graduates are not available by State. Compare *dropout rate*.

Gynecology: The study of diseases peculiar to women, that is, disorders of the ovaries, fallopian tubes, uterus, vagina, and vulva, but not including disorders of the breast.

Hallucinogens: A group of heterogeneous compounds inducing heightened awareness of sensory input, often accompanied by an enhanced sense of clarity, and loss of boundaries. Also known as psychedelics.

Health: Most broadly, a state of optimal physical, mental, and social well-being, and not merely the absence of disease and infirmity. See *adolescent health*.

Health education: Activities aimed at influencing behavior in such a way as it is hoped will assist in the promotion of health and the prevention of disease.

Health maintenance organization (HMO): A health care organization that, in return for prospective per capita (capitation) payments, acts as both insurer and provider of comprehensive but specified health care services. A defined set of physicians (and, often, other health care providers such as physician assistants and nurse midwives) provide services to a voluntarily enrolled population. Prepaid group practices and individual practice associations, as well as "staff models," are types of HMOs.

Health outcome: A measure of the *effectiveness* of preventive or treatment health services, typically in terms of patient health status, but sometimes in terms of patient satisfaction. Attributing changes in outcomes to health services requires distinguishing the effects of care from the effects of the many other factors that influence patients' health and satisfaction.

Health promotion: Most broadly, a philosophy of health or a set of activities that takes as its aim the promotion of health, not just the prevention of disease. Sometimes narrowly defined as the set of prevention efforts aimed at changing individual behavior; compare *health education*, *health protection*, and *preventive services*.

Health protection: Strategies for health promotion and disease prevention related to environmental or regulatory measures that confer protection on large population groups.

Health services system: Traditionally, the aggregation of diagnostic and treatment services delivered by health care professionals, including physicians, physician assistants, nurses, nurse-practitioners, psychologists, and health educators.

Health status goals (of the report "Healthy People 2000"): Goals defined in terms of a reduction in death, disease, or disability (e.g., "Reduce deaths among youth aged 15 through 24 caused by motor vehicle crashes to no more than 33 per 100,000 people" [Healthy People Objective No. 9.3b]).

Heroin: An addictive *psychoactive substance* derived from opium.

Hispanics: Persons who identify themselves as of Hispanic origin, or, less typically, individuals with Hispanic surnames identified by others (e.g., health care providers identifying patients in surveys) as of Hispanic origin. Hispanics can be those whose families have emigrated directly from Spain, or from Cuba, Central or South America. Persons of Hispanic origin can be of any *race* (white, black, American Indian); most have been found to be white.

Home-based (mental health) services: Crisis-oriented services, provided on an outreach basis to work intensively with children and families in their homes. Considered the extreme on the dimensions of timeliness, accessibility, and intensity.

Homelessness: The state of being without one's own home, either on one's own, with one's family, living on the street or in a shelter or other temporary situation (e.g., with relatives or friends). See *runaway* and *thrownaway*.

Hormone: A chemical substance that is released into the circulatory system by a gland that has a specific regulatory effect on another organ; functions regulated include metabolism, growth, and the development of secondary sex characteristics (e.g., breasts, facial hair).

Human immunodeficiency virus (HIV): The virus that causes *AIDS*.

Illicit drug: As used in this Report, any drug that is illegal for use by persons of any age.

Incidence: In health epidemiology, the measure of the number of new cases of a particular disease or condition occurring in a population during a given period of time. The definition of incidence differs when used in juvenile justice statistics (see Glossary, Vol. II).

Indian: In this Report, refers to Native Americans in the continental United States, and Indians, Aleuts, and Eskimos in Alaska.

Indian tribes: Any Indian tribe, band, nation, group, Pueblo, rancheria, or community, including any Alaska Native village, group, or regional or village corporation. A tribe may be federally recognized, State-recognized, or self-recognized and/or federally terminated. In the context of the Federal-Indian relationship, tribes must be federally recognized in order to be eligible for the special programs and services provided by the United States to Indians because of their status as Indians. See *Indian*.

Informed consent: A person's agreement to allow something to happen (e.g., a medical procedure) that is based on a full disclosure of facts needed to make the decision intelligently. Informed consent is also the name for a general principle of law that a physician has a duty to disclose information about the risks of a proposed treatment to a patient so that the patient may intelligently exercise his or her judgment about whether to undergo that treatment.

Inpatient care: Care that includes an overnight stay in a medical facility.

Interdisciplinary: An approach to training of health care professionals and delivery of services that uses the skills of professionals from multiple relevant disciplines (e.g., medicine, nursing, psychology, social work, health education) with an emphasis on those professionals working together to deliver services to adolescents, optimally in a model that does not follow traditional hierarchies.

Internal medicine: Internal medicine in the United States differs from general and family practice mainly in not providing extensive training for pediatric and obstetric care and in providing more experience with severe and complex illness. General internal medicine differs from the subspecialties that have developed out of internal medicine (e.g., cardiology, oncology, hematology) by offering primary care, including first contact care and referrals to subspecialists when warranted.

Internist: A practitioner of *internal medicine*.

Intravenous: Injected into or delivered through a needle into a vein.

Juvenile justice facility: Includes: 1) **juvenile correctional facilities** (facilities that hold juveniles after adjudication and are for the purpose of long-term commitment or placement for supervision and treatment); and 2) **juvenile detention facilities** (facilities that are usually called juvenile detention centers or juvenile halls, and hold juveniles pending adjudication or after adjudication and awaiting disposition or placement). Both juvenile correctional and juvenile detention facilities can be public (i.e., under the direct administration and operational control of a State or local government and staffed by governmental employees) or private (i.e., either profitmaking or nonprofit and subject to governmental licensing but under the direct administration and operational control of private enterprise; private facilities may receive substantial public funding in addition to support from private sources).

Juvenile justice system: The juvenile justice system includes law enforcement officers and others who refer delinquent and maltreated juveniles to the courts, juvenile courts which apply sanctions for delinquent offenses and oversee the execution of child protective services, juvenile detention and correctional facilities, and, less frequently, agencies that provide *protective services* and care (e.g., foster care) for juvenile victims of abuse and neglect. The latter agencies intersect with the child welfare or *social services system*. See *delinquent behavior, juvenile justice facilities.*

Late adolescence: Occurs for those individuals, typically ages 18 to the mid-20s, who, because of educational goals or other social factors, delay their entry into adult roles. Compare *early adolescence, middle adolescence, younger adolescents, and older adolescents.*

Legal access: In this Report, used to refer to aspects of access that have to do with *consent* and *confidentiality.*

Leukemia: Cancers of the blood-forming organs, characterized by abnormal proliferation and development of leukocytes (white blood cells) and their precursors in the blood and bone marrow.

Life-skills training: The formal teaching of the requisite skills for surviving, living with others, and succeeding in a complex society. Life-skills training interventions emphasize the teaching of *social competence, cognitive skills,* and *decisionmaking skills.*

Limitation (in a life activity): As defined by the DHHS National Center for Health Statistics for the *National Health Interview Survey,* refers to what a person is generally capable of and involved in doing (e.g., for those ages 5 to 17 years of age, attending school; for those under age 5, ordinary play; for those ages 18 to 69, either working for pay or keeping house). Compare *restriction of activity.*

Low income: Living in a family that is *poor* or *near-poor.*

Mainstream health services: Inpatient or outpatient care in acute care hospitals and *ambulatory care* in private office-based physicians' offices.

Major activity: In national health interview surveys such as DHHS's *National Health Interview Survey,* persons are classified in terms of the major activity usually associated with the particular age group; attending school is considered the major activity for the age group 5 to 17. Persons are not classified as having a limitation in a major activity unless one or more *chronic conditions* is reported as the cause of the activity limitation.

Maltreatment: *Physical, emotional, or educational neglect,* or *physical, emotional or sexual abuse,* most often perpetrated by a family member.

Marijuana: A mild sedative-hypnotic agent, whose mechanism of action is unknown.

Maternal and child health (MCH) services block grant program: A Federal block grant program authorized under Title V of the Social Security Act, that supports the provisions of health services to mothers and children, especially those with low income or living in areas with limited availability of health services. Funds are provided to States, which in turn may provide them to local health departments. Created by the Omnibus Budget Reconciliation Act of 1981, the MCH block grant consolidated several categorical grant programs into one block grant. The MCH block grant is administered by the Bureau of Maternal and Child Health in the Health Resources and Services Administration in DHHS.

Medicaid: A federally aided, State-administered program that provides medical assistance for low-income people meeting specific income and family structure requirements.

Menstruation: The periodic physiological discharge of blood and mucous membrane from the uterus, recurring at approximately 4-week intervals throughout the reproductive period of the human female (i.e., from puberty to menopause).

Mental disorders: See *diagnosable mental disorders.*

Mental health problems: See *diagnosable mental disorders* and *subjective distress.*

Mental health promotion: A broad range of efforts that seek to foster a healthy mental equilibrium and maintain emotional stability. See *health promotion* and compare *prevention.*

Mental health services: Care for the treatment of *mental health problems, third-party payment* for which is usually limited to *diagnosable mental disorders,* and not available for *subjective distress* without an accompanying diagnosable mental disorder.

Mental retardation: A term used for mental subnormality (i.e., a deficiency of intellectual function).

Mentoring: The practice of acting over time as a guide, tutor or coach, and sometimes as an advocate for another, typically not biologically related, person.

Middle adolescence: Typically, a time of increasing independence. Generally takes place during the period from ages 15 through 17. For those adolescents who do not go on to (and remain in) college, age 17 or completion of high school marks the end of adolescence, in social terms. Compare *early adolescence, late adolescence, younger adolescents, older adolescents.*

Minor: A person who has not reached the age of majority, either age 18 or 19, depending on the State. Currently, the age of majority is set at age 18 in every State but Alaska, Nebraska, and Wyoming, where the age is 19.

Minor offenses: Federal Bureau of Investigation Part II offenses, which include drug abuse violations, weapons violations, assaults without weapons, disorderly conduct, involvement with stolen property, driving under the influence of alcohol or other drugs, and *status offenses.*

Morbidity: The condition of being diseased or otherwise afflicted with an unhealthful condition. See also *new morbidities.*

Multiservice center: See *comprehensive services* for adolescents.

Murder and nonnegligent manslaughter: The willful (nonnegligent) killing of one human being by another. Deaths caused by negligence, attempts to kill, assaults to kill, suicides, accidental deaths, and justifiable homicides, are excluded. Justifiable homicides are limited to 1) the killing of a felon by a law enforcement officer in the line of duty, and 2) the killing of a felon by a private citizen.

National Health Interview Survey: A continuing nationwide sample survey in which data are collected through personal household interviews. Information is obtained on personal and demographic characteristics, illnesses, injuries, impairments, chronic conditions, utilization of health resources, and other health topics. For individuals under age 17, information is collected from a proxy respondent, typically a parent or guardian. The survey is conducted by the National Center for Health Statistics in DHHS.

National Survey of Family Growth: An interview survey, conducted by the National Center for Health Statistics in DHHS, of a sample of women ages 15 to 44 living in households. The purpose of the survey is to provide national data on the demographic and social factors associated with childbearing, adoption, and maternal and child health. These factors include sexual activity, marriage, unmarried cohabitation, divorce and remarriage, contraception and sterilization, infertility, breastfeeding, pregnancy loss, low birthweight, and use of medical care for family planning, infertility, and prenatal care. Four "cycles" of the survey have been conducted, the latest in 1988.

Near-poor: Being in a family with an income between 100 percent and 150 percent of the official Federal poverty level. The Federal poverty level for a family of three was $10,560 in January 1990.

New morbidities: Illnesses and conditions caused by social and behavioral (rather than organismic) factors (e.g., outcomes of sex, drugs, and violence).

Nonnegligent manslaughter: See *murder and nonnegligent manslaughter.*

Obesity: Can be defined in different ways: 1) body mass index (BMI) weight in kilograms divided by height in meters squared [m^2]) greater than or equal to the 95th percentile of a similar population group (usually by age); or 2) 20 percent or more over "normal" weight. More serious than *overweight.*

Older adolescents: As defined in most DHHS National Center for Health Statistics data analyses, adolescents ages 15 to 19.

"One-stop shopping": A setting for health care services that delivers an entire set of *comprehensive health* (and, often, *related) services.* Currently an ideal rather than an actuality.

Outcome: See *health outcome.*

Outpatient care: Care that is provided in a hospital, other medical facility, or other setting that does not include an overnight stay. Sometimes limited to care provided in a hospital setting that does not involve an overnight stay. *Ambulatory care* is the broader category, and includes outpatient care provided in a hospital setting. Outpatient care is often used as a synonym for ambulatory care (e.g., when referring to mental health services).

Overweight: Can be defined as body mass index (BMI) (weight in kilograms divided by height in meters squared [m^2]) greater than or equal to the 85th percentile of a similar group. Compare *obesity.*

Parental consent requirement (applicable to health care of minors): As used in this Report, a legal requirement, grounded in common law, that a parent or other guardian of a minor child must give prior consent to the delivery of medical or surgical care to that child. Courts and legislatures have carved out a variety of exceptions to this requirement and have sometimes replaced the parental consent requirement with a *parental notification requirement.*

Parental notification requirement (applicable to health care of minors): A legal requirement that the parents of minors be notified of the decisions of their minor children to obtain health services. Compare *parental consent requirement.*

Parental support (programs): Preventive interventions that better enable parents to perform any or all of the following functions in relation to their children (including adolescent children): 1) basic needs (e.g., food, shelter, education); 2) protection (e.g., of the psychological, spiritual, and cultural integrity of their children from threats from the natural and social environments);

3) guidance (in all aspects of the child's environments; and 4) *advocacy*.

Partial hospitalization: See *day treatment*.

People of color: Individuals who are nonwhite (i.e., typically, not of the Caucasian race).

Periodontal: Having to do with the area surrounding the teeth, including the gums, the bony layers of the teeth within the gums (cementum), the periodontal membranes, and alveolar (jaw) bone.

Physical (as opposed to mental): Of or related to the body, and having material existence. See *physiological*.

Physical abuse: Physical violence, including kicking, biting, hitting with one's fist, beating, burning or scalding, and using a weapon.

Physical neglect: As defined by DHHS's National Center on Child Abuse and Neglect, physical neglect can take seven forms: refusal to provide health care for physical problems, as recommended by a competent health care professional; delay in providing health care for a serious physical problem; desertion of a child without arranging for reasonable care and supervision (abandonment); other blatant refusals of custody, such as permanent or indefinite expulsion of a child from the home; other custody issues, such as chronically and repeatedly leaving a child with others for days or weeks at a time; inadequate supervision; and other physical neglect, such as conspicuous inattention to avoidable hazards in the home.

Physical problems: See *physical* and *physiology*.

Physiological: Having to do with organs, tissues, and cells, and the physical and chemical phenomena related to organs, tissues, and cells.

Poor: Being in a family with an income below 100 percent of the Federal poverty level. The Federal poverty level for a family of three was $10,560 in January 1990. Compare *near-poor*.

Postsecondary education: Education that takes place beyond the high school (12th grade) level.

Poverty level: See *poor*.

Pregnancy rate: The number of pregnancies per 1,000 population.

Prenatal care: Medical services related to fetal, infant, and maternal health, delivered from time of conception to labor.

Prevalence: A measure of the number of individuals in a given population who have a specific disease or other condition at a designated time (or during a particular period). **Point prevalence**—the proportion of individuals in a population who have a given a condition, which is measured at a particular point in time. **Lifetime prevalence**—a measure of individuals considered at a point in time who have ever had an illness or condition which is under study.

Preventive services: Strategies for *health promotion* or disease prevention that include counseling, screening, immunization, or chemoprophylactic interventions for individuals in clinical settings.

Primary care: Optimally, primary care includes the following elements: first contact care, comprehensive care, coordinated or integrated care, and care that is longitudinal over time rather than episodic. First contact care is the extent to which a patient contacts the source of care whenever he or she perceived a new need for care. Coordination of care entails a health care provider's ability to provide for continuity of information from visits to other providers (e.g., specialists and emergency facilities) as well as from earlier visits to him or herself. Longitudinality of care is the extent to which a provider serves as a source of care over time regardless of the presence or absence of a particular type of problem.

Primary prevention: A category of health and/or related interventions that aim to eliminate a disease or disordered state before it can occur. See *health promotion, health protection, preventive services*. Compare *secondary prevention*.

Proactive: Efforts that attempt to promote health and prevent the occurrence of health problems by changing environments rather than merely attempting to change individual behavior through didactic attempts at persuasion.

Problem behaviors (in adolescence): Those behaviors that have been deemed socially unacceptable or that lead to poor health outcomes (e.g., *unprotected sexual intercourse*).

Property offenses: According to the Federal Bureau of Investigation, **serious property offenses** include burglary, larceny-theft, motor vehicle theft, and arson. **Minor property offenses** include involvement with stolen property. Compare *violent offenses*.

Protective services: An aspect of *social services* designed to prevent neglect, abuse, and exploitation of children by reaching out with social services to stabilize family life (e.g., by strengthening parental capacity and ability to provide good child care). The provision of protective services follows a complaint or referral, frequently from a source outside the family, although it may be initiated by an adolescent him or herself.

Psychiatric hospitalization: Hospitalization in a specialty mental health facility or in a general hospital for purposes of mental health evaluation or treatment.

Psychoactive substance: A substance that has mood-altering abilities.

Puberty: The period of becoming first capable of reproducing sexually, marked by maturing of the genital organs, development of secondary sex characteristics (e.g., breasts, pubic hair), and in humans and higher primates, the first occurrence of menstruation in the female.

Quality of health care: Evaluation of the performance of health care providers and organizations according to the degree to which the process of care increases the probability of outcomes desired by patients and reduces the probability of undesired outcomes, given the state of medical knowledge.

Race: Races can be distinguished by usually inherited physical and physiological characteristics without regard to language or culture (caucasoids, negroid, mongoloid). By Census Bureau definition, the term race is used to distinguish among peoples who are white (caucasoid), black (negroid), or Asians or Pacific Islanders or American Indians (mongoloid). See *ethnicity*, *Hispanic*, *Indian*.

Randomized clinical trial: An experiment designed to test the safety and/or *efficacy* of an intervention in which people are randomly allocated to experimental or control groups, and outcomes are compared.

Related intervention: A preventive or other service that may enhance health (e.g., social services, vocational training, educational services, food, housing, mentoring) but is not delivered in what is traditionally considered the *health services system*.

Reliability: The extent to which a measurement or result is obtained consistently.

Reproductive health care: Can include a wide range of services related to the male or female reproductive systems, including gynecological treatment services (i.e., examination and treatment of the female reproductive organs), and preventive services related to the use of contraception (e.g., counseling, prescribing contraceptive methods, dispensing contraceptives). See also *prenatal care*.

Restricted-activity day: One of the following four types of days in which a person's activity is restricted: 1) a bed day, during which a person stayed in bed more than half a day because of illness or injury or was in a hospital as an inpatient; 2) a work-loss day, during which a currently employed person 18 years of age and over missed more than half a day from a job or business, 3) a school-loss day, during which a student 5- to 17-years-old missed more than half a day from the school in which he or she was currently enrolled; and 4) a cut-down day, during which a person cuts down for more than half a day on the things he or she usually does. Work-loss, school-loss, and cut-down days refer to the short-term effects of illness or injury. Bed days are a measure of both long- or short-term disability, however, because a chronically ill bedridden person and a person with a cold could both report having spent more than half a day in bed due to an illness. See *restriction of activity*.

Restriction of activity: As used in the DHHS National Center for Health Statistics' *National Health Interview Survey*, ordinarily refers to a relatively short-term reduction in a person's activities below his or her normal capacity. See *restricted-activity day*.

Risk reduction goal (of the report "Healthy People 2000"): Defined in terms of prevalence of risks to health or behaviors known to reduce such risks (e.g., "Increase use of helmets to at least 80 percent of motorcyclists and at least 50 percent of bicyclists" [Healthy People Objective No. 9.13]).

Risk-taking behavior: An activity that may involve a risk to one's health. For adolescents especially, risk-taking generally carries a negative connotation, but some risk-taking is essential to the further development of competence, and thus some risk-taking can have positive health and other benefits.

Robbery: The taking or attempting to take anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or by putting the victim in fear.

Rolelessness: The perception by adolescents (and many learned observers) that adolescents as a socially defined group do not have clear and useful roles to play in American society. That is, their function consists largely of being students and otherwise preparing themselves for the future, but there are few expectations for them to contribute to society while they are adolescents.

Runaway: A young person who is away from home at least overnight without the permission of a parent or caretaker. Compare *homelessness*, *thrownaway*, and *street kid*.

Rural: As strictly defined by the U.S. Census Bureau, rural refers to places of 2,500 or fewer residents. (Census-recognized "places" are either 1) incorporated places such as cities, boroughs, towns, and villages; or 2) closely settled population centers that are outside of urbanized areas, do not have corporate limits, and (unless they are in Alaska and Hawaii) have a population of at least 1,000.) The term "rural" is often used to refer to nonmetropolitan statistical areas (i.e., any area not in a metropolitan statistical area, which, as defined by the U.S. Office of Management and Budget, a county or group of counties that includes either a city of at least 50,000 residents, or an urbanized area with at least 50,000 people that is itself part of a county/counties with at least 100,000 total residents).

Safer sex practices: Sexual practices designed to avoid actual and potential transmission of HIV infection and other sexually transmitted diseases (e.g., avoiding exchange of body fluids, use of *condoms*).

School-linked health centers: Refers to any school health center for students (and sometimes the family members of students and/or school dropouts) that provides a wide range of medical and counseling services and is located on or near school grounds and is associated with the school. Compare *comprehensive services for adolescents*.

School-loss day: A day in which a student missed more than half a day from the school in which he or she was currently enrolled.

Secondary prevention: An intervention that strives to shorten the course of an illness by early identification and rapid intervention.

Sedatives: Central nervous system depressants that produce relief from anxiety, including barbiturates, metaqualone, and tranquilizers.

Self-insured (health insurance) plan: A self-insured plan is a health benefit plan in which the financial risk for providing medical services is assumed by the employer or sponsor instead of purchasing health insurance from an insurance company. The employer or sponsor may continue to contract with an insurance company or other organization for claims processing and administrative services, as well as stop-loss insurance to limit the amount of their liability for medical claims.

Self-report data: An indication of a survey respondent's attitudes, knowledge, or behavior that is reported by the respondent him or herself.

Serious offenses: Federal Bureau of Investigation Part I offenses, which include specified *violent offenses* (i.e., murder and nonnegligent manslaughter, forcible rape, robbery, and aggravated assault) and specified *property offenses* (i.e., burglary, larceny-theft, motor vehicle theft, and arson).

Sexual abuse: As defined by DHHS's National Center on Child Abuse and Neglect, sexual abuse can take three forms: actual penile penetration; molestation with genital contact; and other unspecified acts not known to have involved actual genital contact (e.g., fondling of breasts or buttocks, exposure), or inadequate or inappropriate supervision of a child's voluntary sexual activities.

Sexual activity rate: As typically used in the literature, the number of individuals who have ever had sexual intercourse, per some population base.

Sexually active: As typically used in the literature, sexually active denotes ever having had sexual intercourse (as opposed to currently being sexually active).

Sexually transmitted disease (STD): An infectious disease transmitted through sexual intercourse or genital contact. Formerly (and sometimes, in law) called venereal disease.

Sickle-cell disease: A lifelong disorder due to an inherited abnormality of the hemoglobin molecule, characterized by chronic anemia, a sickle-shaped deformity of red blood cells, and intermittent occlusions of the the blood vessels.

Sinusitis: Inflammation of one or more of the sinuses that communicate with the nasal cavity.

Smokeless tobacco: Tobacco that is typically chewed or held in the mouth rather than smoked. Contains nicotine, a central nervous system *stimulant*.

Social competence: Competence in aspects of interpersonal interaction, including: managing social transactions such as entry into social situations; ability to maintain satisfying personal and work relationships; ability to resolve interpersonal problems so that there is both mutual satisfaction in the encounter and preservation of valued goals; ability to improvise effective plans of action in conflicted or disrupted situations; and ability to reduce stress and contain anxiety within manageable limits. The mediating factors affecting social competence that have been found to be susceptible to *life-skills training* include the individual adolescent's: 1) motivation (i.e., to acquire knowledge and skills to enhance social competence); 2) knowledge base (i.e., about developmentally relevant health and social concerns); and 3) social skills (e.g., communication, empathy, ability to regulate one's own behavior).

Social environment: The aggregate of social and cultural conditions that influence the life of an individual or community. Aspects of the social environment particularly important to adolescents include the adolescents' families, other adults with whom adolescents come in contact, schools, workplaces, recreational facilities, and the media.

Social services: Services provided in order to support the functioning of individuals or family units, including those services termed: 1) "supportive" or "*protective services*"; 2) supplementary services (i.e., financial assistance, home aid services (e.g., homemaker, caretaker, and parent aide services), respite care); and 3) "substitute" services (e.g., shelter services, foster care, adoption).

Social support: Can involve the provision of any or all of: 1) supportive aid, including practical services and material benefits; 2) personal affirmation, including feedback that raises self-esteem and strengthens personal identity; and 3) supportive affect, particularly affection, caring, and nurturance. Compare *parental support programs*.

Socioeconomic status: Used in this Report as a synonym for income levels, typically those of an adolescent's family of origin, because adolescents are unlikely to have their own independent sources of income. See *poor, near-poor*.

Status dropout rate: See *dropout rate*.

Status offenses: Acts that are legal offenses solely because they are committed by a juvenile, such as running away from home and truancy.

Stimulants: Psychoactive substances that stimulate the central nervous system, including amphetamines, caffeine, and heroin.

Street kid: A long-term *runaway*, *thrownaway*, or otherwise *homeless* child or adolescent who has become adept at fending for him or herself "on the street," usually by illegal activities.

Subjective distress: Feelings of sadness, hopelessness, discouragement, boredom, stress, dissatisfaction, or being worn out or exhausted, that are *self-reported* by individuals but are not necessarily symptoms of *diagnosable mental disorders.*

Substance: Term used for alcohol, tobacco, and *illicit drugs.*

Substance abuse: What constitutes adolescent substance abuse (any use at all or ''problem'' use) is a matter of controversy. The DHHS Office of Substance Abuse Prevention is of the view that any use by adolescents of psychoactive substances by adolescents should be considered abuse; the American Psychiatric Association distinguishes between substance use, substance abuse, and *substance dependence,* although does not make distinctions by age. According to the American Psychiatric Association's diagnostic manual (DSM-III-R), substance abuse is characterized by maladaptive patterns of substance use that have never met the criteria for dependence for that particular class of substance, that results in harm to the user, and that the user continues despite persistent or recurrent adverse consequences.

Substance dependence: A mental disorder in which a person has impaired control of psychoactive substance use and continues use despite adverse consequences. It is characterized by compulsive behavior and the active pursuit of a lifestyle that centers around searching for, obtaining, and using the drug.

Suicide: The taking of one's own life.

Survival sex: Engaging in sexual intercourse in exchange for food, shelter, money, or drugs.

Syphilis: A *sexually transmitted disease* caused by the bacterial agent *Treponema pallidum,* resulting in symptoms including chancre (primary syphilis); skin rash, malaise, anorexia, nausea (secondary syphilis); and eventually, central nervous system abnormalities and other serious problems (tertiary syphilis).

Therapeutic foster care: A type of mental health care optimally involving the following features: 1) placement of a child with foster parents who have specifically been recruited to work with an emotionally disturbed child or adolescent; 2) provision of special training to the foster parents to assist them in working with the child; 3) placement of only one child in each special foster home (with occasional exceptions); 4) a low staff to client ratio, thereby allowing clinical staff to work very closely with each child, with the foster parents, and with the biological parents if they are available; 5) creation of a support system among the foster parents; and 6) payment of a special stipend to the foster parents for working with the emotionally disturbed child or adolescent, and for participating in the training and other program activities. Regarded as the least restrictive of residential mental health services.

Therapeutic group care: A type of mental health care provided in homes which typically serve anywhere from 5 to 10 children or adolescents, and provide an array of therapeutic interventions and a therapeutic environment.

Third-party payment: Payment by a private insurer or government program to a medical provider for care given to a patient.

Thrownaway: A child or adolescent who has been told to leave the household, has been abandoned or deserted, or who has run away and no effort has been made to recover him or her.

Title X: See *family planning programs authorized by Title X of the Public Health Service Act.*

Tracking: The assigning of students to a particular curricular track, usually on the basis of estimated ability.

Tranquilizers: See *sedatives.*

Traumatic brain injury: Injury to the brain occurring as the result of impact.

Treatment: Interventions intended to cure or ameliorate the effects of a disease or condition once the condition has occurred.

Tribal groups: See *Indian tribes.*

Unprotected sexual intercourse: Sexual intercourse without precautions taken to prevent pregnancy or the transmission of *AIDS* or *sexually transmitted diseases.*

Validity: A measure of the extent to which an observed situation reflects the true situation.

Venereal disease: See *sexually transmitted disease.*

Violent offenses: According to the Federal Bureau of Investigation, **serious violent offenses** include murder and nonnegligent manslaughter, forcible rape, robbery, and aggravated assault. **Minor violent offenses** include assaults without weapons and weapons violations. Compare *property offenses.*

Waiting mode: The waiting mode of health service delivery is characterized most strongly by professionals physically remaining within a service system and, indeed, waiting for clients, generally with chronic problems, to come to them. The waiting mode is distinguished from the ''seeking mode'' wherein professionals are usually physically operating outside the service system and seeking to intervene in problems before they become chronic. In practice, it is acknowledged that waiting/seeking is best thought of as a continuum, and less as a dichotomy.

''Wraparound services'': A term used to denote a philosophy or practice of flexibly providing and funding mental health services that are designed to meet the unique needs of a particular adolescent, rather than (or in addition to) providing specified funding for particular settings or types of services (e.g., hospitals). The service package is developed by the child or adolescent's case manager and is purchased from vendors; when a service for a given child or adolescent is not available from an existing organization, funds are used to develop the service (e.g., flying in a consultant to treat a patient with schizophrenia rather than moving the patient to a hospital in another State).

Younger adolescents: As defined in most studies and data analyses, adolescents ages 10 to 14.

Youth Advisory Panel (OTA's): The group of 21 young people ages 10 through 19 who met with OTA staff, the OTA Adolescent Health Advisory Panel, and attended workshops in order to provide the adolescent perspective on health issues.

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APRIL 1991